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THE LITTLE LABORERS OF NEW YORK CITY.

LITTLE TOBACCO STRIPPERS.

ONE of the most touching facts to any one examining the lower strata of New York is the great number of young children toiling in factories and shops. With the children of the fortunate classes there are certain years of childhood which every parent feels ought to be freed from the burdens and responsibilities of life. The "struggle for existence," the labor of money-making, the toil for support, and all the cares and anxieties therewith, will come soon enough. And the parent is glad that the first years at least should be buoyant and free from care, with no shadow of after-life upon them. He knows how heavy the burden must be which the child will soon be forced to carry, and he is pleased that a few years can be left cheerful and happy and free from anxiety. But the father of the poor child can indulge in no such sentiments. He is compelled to harness the little one very early to the car of labor, or if he be not forced to this, he is indifferent to the child's natural growth and improvement, and believes that his boy ought to pass through the same hard experience which he had himself. He is struggling with poverty, and eager for every little addition which he can make to his income. The child's wages seem to him important, and, indeed, it requires a character of more disinterestedness and a mind of more scope of view than we usually find among the laboring class to be able to forego present profit for the future benefit of the little one. The laborer sees the daily earnings, and does not think much of the future advantages which the child may win by being educated now. The father, accordingly,

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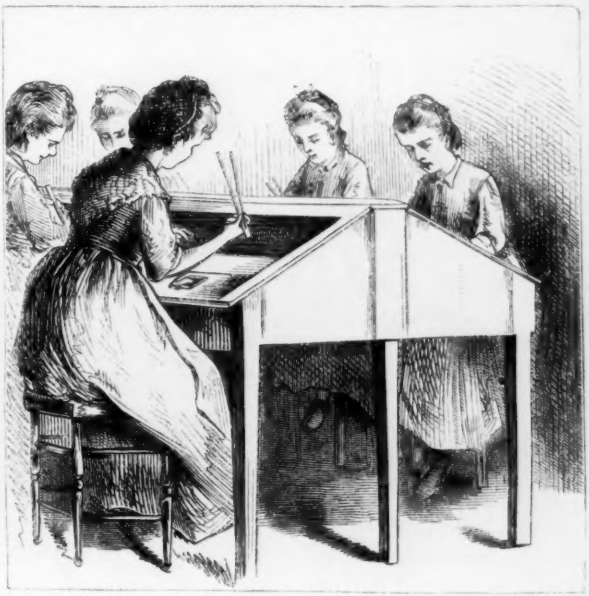
ENVELOPE MAKERS.

of a poor boy is found in all countries to be willing to neglect his education, if he can put him at profitable work. Neither his affection for his offspring nor his unselfishness can be relied upon as guarding his child's future. The law is forced to protect the minor.

In Great Britain the evils of this great army of infant workers had, a few years since, increased to an alarming extent. Hundreds of thousands of little ones were found growing up without any education, except the petty practical experience of the small branch of factory labor in which they were engaged, without any full development of body, their little forms bent and rickety, their countenances pale, their growth stunted by premature labor, and arriving at manhood utterly unfitted either to be citizens or the heads of new families. Vast numbers of them also died under this youthful slavery; and the mines and factories were discovered to be an immense slaughter-house for these unfortunate children. At length a band of devoted reformers and philanthropists arose, who were determined that this burning shame of their country should be wiped out, who felt that the wealth and culture of England rested on a hideous foundation when the labor of oppressed children built up the structure. They began an incessant agitation against the overlabor of factory children. They wrote for the press, printed documents, held public meetings, petitioned Parliament, and sought in every way to rouse the public feeling and conscience. They had against them the indifference of the poor parents themselves, and an enormous factory interest which made rich profits out of the toil of these unhappy children of poverty. Every where the specious arguments were brought forward that the poor themselves most of all needed the labor, that the earnings of the children supported the families of the laborers, and if these were excluded from factories they would all come upon the unions or the public almshouses. It was claimed that it was better to support the children of the laborers even by their own overwork than to keep them in poor-houses. It was urged that it was an oppression on the parents, who had brought these children into the world, not to allow them to use their earnings. The production of England would be diminished, it was said, and she would lose in the markets of the world, if this great source from children's labor were dried up. Even the education of the factory was lauded, and it was claimed that the incessant labor on one object was better for a poor child than the training it would get in the streets. To direct the manufacturer where to procure labor and where not was an interference with "freedom of trade." Capital and labor, even child's labor, should be left to natural laws.

Against all these sophistical arguments, however, the great humanity of England asserted itself. It saw it was the manifest duty of the state to guard the children of the poor and unfortunate against the greed of capital and the indifference of their own parents. It felt that these little beings were the wards of the public; that they ought not to be dwarfed in body and cramped in mind by the covetousness of others; that they had a claim on the protection of the fortunate. It was more and more seen, also, that it was not for the interest of England that a great multitude of human beings should grow up among the people ignorant in mind, weakened in body, and unfit for the duties of manhood. There were "danger-

ous classes" enough in the English cities, whom no reformation or legislation could reach, without adding to them this immense mass of children, enslaved, as it were, in their early years. The interest of the state was evidently in education, even if production were diminished. A greater evil than poverty was widespread ignorance. It was clear, too, that this great class of children would produce all the more hereafter if their minds could be trained in childhood. The best condition for popular wealth is popular education. Moreover, it was not believed that the exclusion of the children from the factories would drive the families to the almshouse. There was no difficulty, evidently, in arranging half-time schools and half-time work. The one would help the other. The young laborer would be better for his school, and the young scholar for his toil.



GOLD-LEAF WORKERS.

After incessant discussion and a long contest, the English "Factory Bills" were carried through Parliament, were repeatedly amended, improved, and enlarged, until they form now a ponderous Blue-Book.

These acts have been rigorously executed, and their effects have been that hundreds of thousands of little "white slaves" have been redeemed from slavery, saved from premature toil and sickness, and that a new class of English laborers are growing up, better educated, healthier, happier, and of more value to their employers. The reform was one of the most glorious and beneficent ever carried out in Great Britain.

This terrible evil of the overwork of children was early felt in the State of Massachusetts. A great manufacturing population had concentrated there, and some of the economical conditions of the Old World were repeated. Children were found in various parts of the State enslaved to labor from their earliest years, without proper education, and weakened in bodily power. No thorough effort, however, was made to check the evil till 1866, when the Legislature passed an act "restraining the employing of children of tender years in manufacturing establishments." This was subsequently repealed, and a more thorough and stringent law passed in 1867 (Chapter 28). By this act no child under ten years of age could be employed in any manufacturing establishment in the State. Of children between the ages of ten and fifteen years no one was allowed to be thus employed unless he had attended a day school at least "three months of the year preceding," or a "half-time school" during the six months. And if this amount of education be not secured, the employer is obliged to at once dismiss the child. It is necessary also that the school should be a suitable one, and approved by the school committee of the town where the child resides. The "ten-hour provision" is also made applicable to children, and no child under fifteen can be thus employed more than sixty hours per week. If ever the "Eight-hour Act" was reasonable, it would be as applied to children, and forty-eight hours per week seems to us quite enough for any working boy or girl. The penalty for the violation of this act in Massachusetts is fifty dollars both to employer and parent.

The phraseology of the Massachusetts law does not seem as careful as would be desirable, and is not made sufficiently yielding in cases of hardship among the poor; neither is sufficient power given to the executive officer to enter manufacturing establishments, and no sufficient school certificates or forms of registration for the factory children are provided for.

THE LITTLE BURNISHERS.

It is evident, however, that, with all its defects, the law has brought about a great alleviation of the evil of children's overwork. The officer appointed for the execution of the act has been in correspondence with all the manufacturers of the State, and has visited their works. This has at once called the earnest attention of the employers of Massachusetts, who are a very intelligent and philanthropic class, to the extent of this great evil. They have immediately sought for themselves to remedy it. Some of them have established half-time schools, which they require all the children in their employ to attend; and their experience here is similar to that in England—that they secure thereby a much better class of workers. Others arrange double gangs of young operatives, so that one set may take the place of another in the factory while the latter are in school. Others, again, have founded night schools, and great numbers of the young factory laborers are trained in these. The law is considered throughout Massachusetts as having been the commencement of a great and much-needed reform.

The act passed in Rhode Island (Chapter 139) is very similar to that of Massachusetts, except that no child under twelve can be employed in any factory, and no child during the nine months of factory-work is allowed to be employed more than eleven hours per day. The penalty for the violation is only twenty dollars.

Connecticut is in advance in matters of educational reform. Her citizens early saw the terrible evil from children's overwork, and the Legislature passed acts against it as early as 1842. The final and most stringent law, however, passed on this subject in Connecticut was in 1869 (Chapter 115). This law includes agricultural as well as manufacturing labor, and it throws on the employer the responsibility of ascertaining whether the children employed have attended school the required time, or whether they are too young for labor. The rules, too, in regard to school attendance are exceedingly strict. The age at which three months' school-time is required is fourteen. The penalty for each offense is one hundred dollars.

The law, however, is defective in that it does not establish the lowest age under which a child may be employed in a factory, and does not limit the number of hours of labor per week for children in manufacturing establishments.

The manufacturers of Connecticut seem to have co-operated with the law with the utmost good sense and humanity. One of them writes to the State executive officer: "We do not dare to permit the children within and around our mills to grow up without some education. Better for us to pay the school expenses ourselves than have the children in ignorance." Others have followed the example of Massachusetts manufacturers, and have opened night schools and half-time schools for their little employés, while others have permitted the division of the children into alternate gangs, of whom one is in school while the other is in the factory.

It is difficult to obtain minute or accurate information in relation to children employed in factories in New York city, and more difficult still to gain access to the factories, owing to the reluctance of employers to admit strangers. The manufacturers naturally suspect some sinister motives on the part of the inquirers. They are jealous of one another, and desirous of keeping their various patents and modes of work secret from

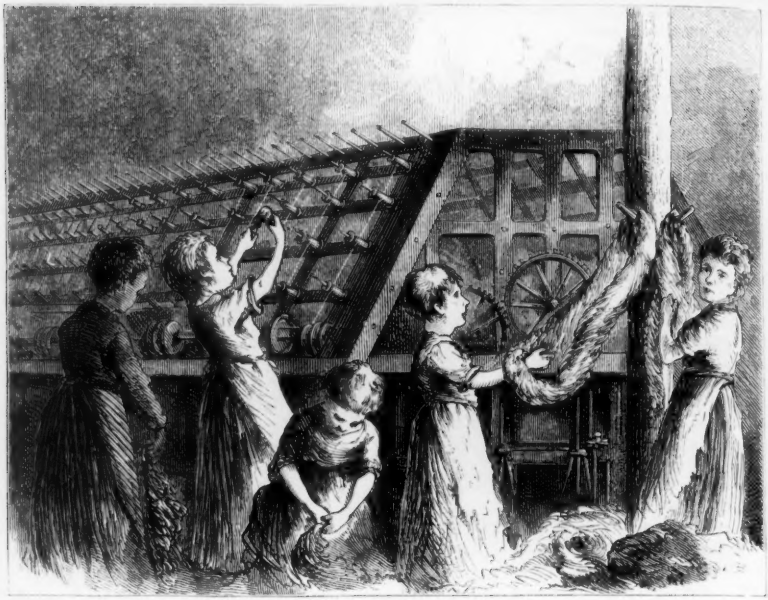
their competitors. There have been not infrequent instances of covert attempts by the members of one firm to get possession of the secrets of another, and they are consequently all somewhat suspicious of strangers making inquiries.

It is estimated on trustworthy grounds that over 100,000 children are at work in the factories of New York and the neighboring districts, while from 15,000 to 20,000 are "floaters," drifting from one factory to another. Of these the envelope factories employ about 8000 children, one-quarter of whom are under fifteen years of age. The average earnings of the little workers are $3 per week. The ventilation in these factories is generally good. The gold-leaf factories employ a large number of children, though the exact statistics of the number can not be given. This occupation requires much skill and delicacy of touch; it is not severe, but demands constant attention. The outside air is carefully excluded from these factories, owing to the fragile nature of the material used. The girls employed are mostly over fifteen years of age. The burnishing of gold, silver, and china-ware is mostly done by girls, some of whom are under thirteen years of age. Singularly enough, it is said that men in this business require to wear breastplates, in order to prevent injury from the steel instruments employed, while the girls who labor at it sit at long tables, their undefended breasts pressing against the handles of the frame.

MAKING PAPER COLLARS.

MAKING PAPER BOXES.

Paper-collar factories are a very important branch of



TWINE MAKERS.

children's labor. Fully 8000 girls from twelve to sixteen years of age are employed in it. A girl can count and box 18,000 collars in a day of ten hours.

Paper-box factories, embracing all sorts and sizes, from a match to a work box, employ at least 10,000 children. These become very expert, and often invent new patterns. The material being cheap, the children are permitted to take home enough to do extra work, and are thus, in fact, excluded from night school.

In regard to factories for making artificial flowers it is extremely difficult to obtain trustworthy information, as access to the shops is rigidly refused. After considerable investigation, it seems to us that from 10,000 to 12,000 children are engaged in them, of whom nearly 8000 are under twelve years of age. Many are only five and seven years old. The latter are employed preparing and cutting feathers for coloring. Employers claim this to be a healthy business, but, judging from the pale and sickly countenances of the girls, we doubt the assertion.

Another important industry employing children in the city is the manufacture of tobacco. The tobacco factories contain fully 10,000 children, of whom 5000 at least are under fifteen years. The youngest child we saw employed in them was four years of age. He was engaged in stripping tobacco, and his average earnings were about one dollar per week. Many laborers work all their lives in these factories. We saw persons as old as eighty years in them. A man seventy years of age told us he had spent thirty years in one factory. His two boys had entered the factory with him at the age of ten and twelve years, and were now at work as men in the same shop. Another, the foreman, and general workshop manager, had entered that factory thirty-five years ago, when a boy ten years of age. In some of these factories boys under fifteen years are employed in dusky cellars and basements, preparing, brining, and sweetening the weed preliminary to "stemming." The under-ground life in these damp, cavernous places tends to keep the little workers stunted in body and mind. Other boys from ten to twelve years were squatting on the floors, whetting the knives of the cutting machines with a mixture of rum and water applied with a sponge. The rapidity with which the girls work is wonderful. A girl of sixteen years can put up thirteen gross of packages of chewing tobacco in tin-foil, and twenty-two gross in paper, in one day. Girls and boys from twelve to fourteen years earn in this business from four to five dollars per week. Some little girls only eight years of age earn $3 per week. The fact is that these children are often able to perform the same amount of this light labor as adults, while they only receive a portion of the pay given to older laborers. Thus the children who ought to be in school are made to deprive older laborers of their employment and remuneration.

THE NIGHT SCHOOL.

Still another branch absorbs a great number of children—the twine factories. No accurate estimate can be obtained of the number of little laborers in these, but it is known to be very large. In one up-town factory alone, 200 children, mostly girls, are employed. This work is dangerous. The "hackling machines" are generally tended by boys from ten to fifteen years of age. Their attention must be riveted on the machinery, and can not relax for a moment, or the danger to life or limb is imminent. The "twisting machines," attended to by girls, are equally dangerous. Many have lost their fingers, or joints of them, that were caught in the twine. Only great presence of mind has saved many of these girls from losing the whole hand. We knew in one instance, in a single night school in New York, five factory girls who had each lost a finger or thumb. It is evident that strict legislation is needed here, as it has been in England, to protect these young workers from dangerous machinery. The air of these twine factories is filled with floating particles of cotton and flax, and must be exceedingly unhealthful.

It will be seen from these condensed statistics what an immense population of children in this city are the little slaves of capital. How intense and wearying is their daily toil, and how much of their health and education is sacrificed in these early years and premature labor! The evil in New York is evidently enormous, and most threatening to our future. These children, stunted in body and mind, are growing up to be our voters and legislators. There are already over 60,000 persons in New York who can not read or write. These little overworked operatives will swell this ignorant throng. Fortunately this great abuse has not escaped the attention of humane men.

There is one well-known benevolent organization in New York which has been especially the friend of working children—the Children's Aid Society. This has established in various parts of the city "industrial schools," where the children of the working classes are taught habits of industry, order, and cleanliness, together with common-school lessons and some industrial branch, and are then forwarded to places in the country. Besides these well-known institutions, which contain now during the year some nine thousand children, they have also founded night schools in destitute quarters, where boys and girls who labor all day can acquire a little education at night. The eagerness of these hard-working youths after a day of severe toil to obtain the rudiments of education is one of the most pathetic experiences in the field of the society's work. In one school, the Park School, near Sixty-eighth Street, young girls and lads, who have been working from seven o'clock till six, have been known to go without their supper in order not to miss the evening lessons. The stormiest weather and the worst

SEWING-MACHINE OPERATORS.

walking do not keep them from these schools. In the various night schools of the Children's Aid Society will be found hundreds of little ones from six to thirteen who have been working very hard the whole day, and who are now just as eager to learn their little tasks. Their occupations are innumerable. Thus we learn from a recent report from one of the society's visitors that at the school at 98 Crosby Street "there were some hundred children. Their occupations were as follows: They put up insect powder, drive wagons, tend oyster saloons; are tinsmiths, engravers, office-boys; in type-foundries, at screws, in blacksmith shops; make cigars, polish, work at packing tobacco; in barber shops, at paper stands; are cash-boys, light porters, make artificial flowers, work at hair; are errand-boys, make ink, are in Singer's sewing-machine factory, and printing-offices; some post bills, some are paint scrapers, some peddlers; they pack snuff, attend poultry stands at market, in shoe stores and hat stores, tend stands, and help painters and carpenters.

"At the Fifth Ward School (No. 141 Hudson Street) were fifty boys and girls. One of them, speaking of her occupation, said: 'I work at feathers, cutting the feathers from cocks' tails. It is a very busy time now. They took in forty new hands to-day. I get three dollars and fifty cents a week. Next, I'll get more. I go to work at eight o'clock, and leave off at six. The feathers are cut from the stem, then steamed, and curled, and packed. They are sent then to Paris, but more South and West.' One boy said he worked at twisting twine; another drove a 'hoisting-horse;' another blacked boots, etc.

"At the Eleventh Ward School, foot of East Eleventh Street, there was an interesting class of boys and girls under thirteen years of age. One boy said he was employed during the day in making chains of beads, and says that a number of the boys and girls present are in the same business. Another said he worked at coloring maps. Another blows an organ for a music-teacher.

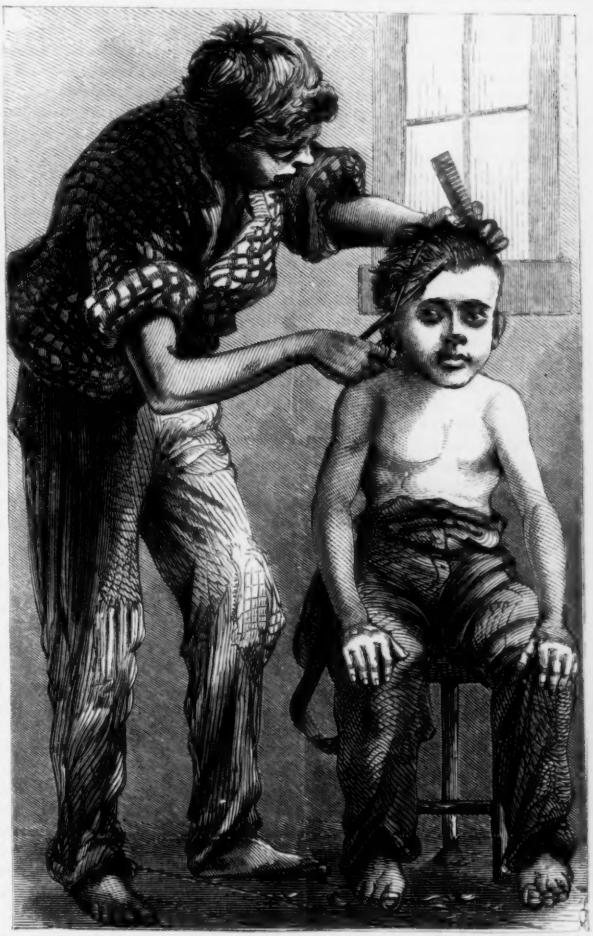
"At the Lord School, No. 207 Greenwich Street, the occupations of the girls were working in hair, stripping tobacco, crochet, folding paper collars, house-work, tending baby, putting up parcels."

Among the institutions of this society for the education of working children should not be forgotten the Girls' Lodging-House, at No. 27 St. Mark's Place. Here a gratuitous "Sewing-machine School" was opened a few years since, the manufacturers supplying machines gratuitously, and any destitute girl, whether a lodger in the house or not, can be trained here to be an "operator." It is found often that a poor half-starved girl will enter this school, and if bright in learning the business, will in three weeks go out and earn from a dollar to two dollars a day in operating on a machine. The fact is a remarkable one in an econom-

TRAINING SERVANTS.

ical point of view, and shows that the supply of skilled machine labor is by no means equal to the demand. That such wages can be earned by utterly destitute girls, after so short a training, is one of the most hopeful signs which have ever appeared here with reference to the female working class. In this machine school, during the year, over a thousand girls are trained.

Another interesting experiment in this house is the opening of a "training school for servants." Its benevolent managers have taken pity on our housekeepers. They have remembered the troubles which every family undergoes from awkward and ignorant domestic service; the bad and unhealthy cookery, the slovenly house-cleaning, the ill-made beds, the poorly washed garments, and all the inflictions which we suffer daily from a class of workers who do not understand their business. An experiment is being made to remedy this evil by training a few young girls in this house as thorough and skillful servants. They are taught to cook a simple and nourishing breakfast in the morning; they then receive lessons in bed-making; they are next drilled in sweeping and scrubbing. They are instructed how to prepare a plain and well-cooked dinner, and a supper which a Christian may eat. On some days they are trained in laundry-work, on the sewing-machine, and in hand-sewing. The idea is an excellent one, and the experiment may result in producing a class, which is the greatest necessity in this country, of thorough-trained servants. The practical difficulty, however, will be that every housekeeper of the land is at the head of a "domestic training school," which will more than compete with this, as the lady not only trains the girl, but pays her board and wages for being trained.



THE NEWSBOY'S FIRST LESSON.

Besides this lodging-house are four other lodging-houses, for newsboys, boot-blacks, and other street lads. The best known of these is the Newsboys' Lodging-House, No. 49 Park Place, the first ever opened in any country, founded in 1854. During nineteen years it has sheltered 91,426 different boys, restored 7196 lost and missing ones to friends, provided 7108 with homes, furnished 576,493 lodgings, and 426,580 meals. The entire expense of all this, including rent, furniture, repairs, etc., has been $124,223 29, of which amount the boys have contributed $32,806 96, leaving the actual expense, over and above receipts from boys, $91,416 33, being only about $1 for each boy.

Still another is the Rivington Street Lodg-

ing-House, No. 327 Rivington Street, which has attached to it a beautiful greenhouse of flowers; a third is at No. 709 East Eleventh Street, and a fourth at No. 211 West Eighteenth Street. All these lodging-houses together shelter during the year some 12,000 homeless children.

Another ingenious effort for the benefit of the destitute children of the city is the "placing-out system," which has been carried out by the Children's Aid Society during the last twenty years with such remarkable success. The society early saw the immense benefit in taking advantage of the peculiar economical condition of this country in treating questions of pauperism. They at once recognized the fact, and resolved to make use in their plans, of the endless demand for children's labor in the Western country. The housekeeping life of a Western farmer is somewhat peculiar. The servants of the household must be members of the family, and be treated more or less as equals. It is not convenient nor agreeable for a Western matron to have a rude European peasant at the same table and in the same room with the family. She prefers a child whom she can train up in her own way. A child's labor is needed for a thousand things on a Western farm. Children, too, are valued and thought much of. The same opportunity is given to working children as to all other children. They share fully in the active and inspiring Western life. They are moulded by the social tone around them, and they grow up under the very best circumstances which can surround a poor boy or girl. No treatment which man could devise could possibly be so beneficial to the laboring children of this city as that offered by Western farms. Moreover, a child's place at the table in our rural households is of small account. Of food there is enough and an abundance. Generosity, and especially toward children, is the rule in our Western districts. This benevolent association, taking advantage of these great facts, early made arrangements for scattering such little workers of the city as were friendless and homeless all through the Western country. Western agents are employed who travel through remote farming districts, and discover where there is an especial call for children's labor. An arrangement is then made with the leading citizens of the village to receive a little detachment of these homeless children of the great city.

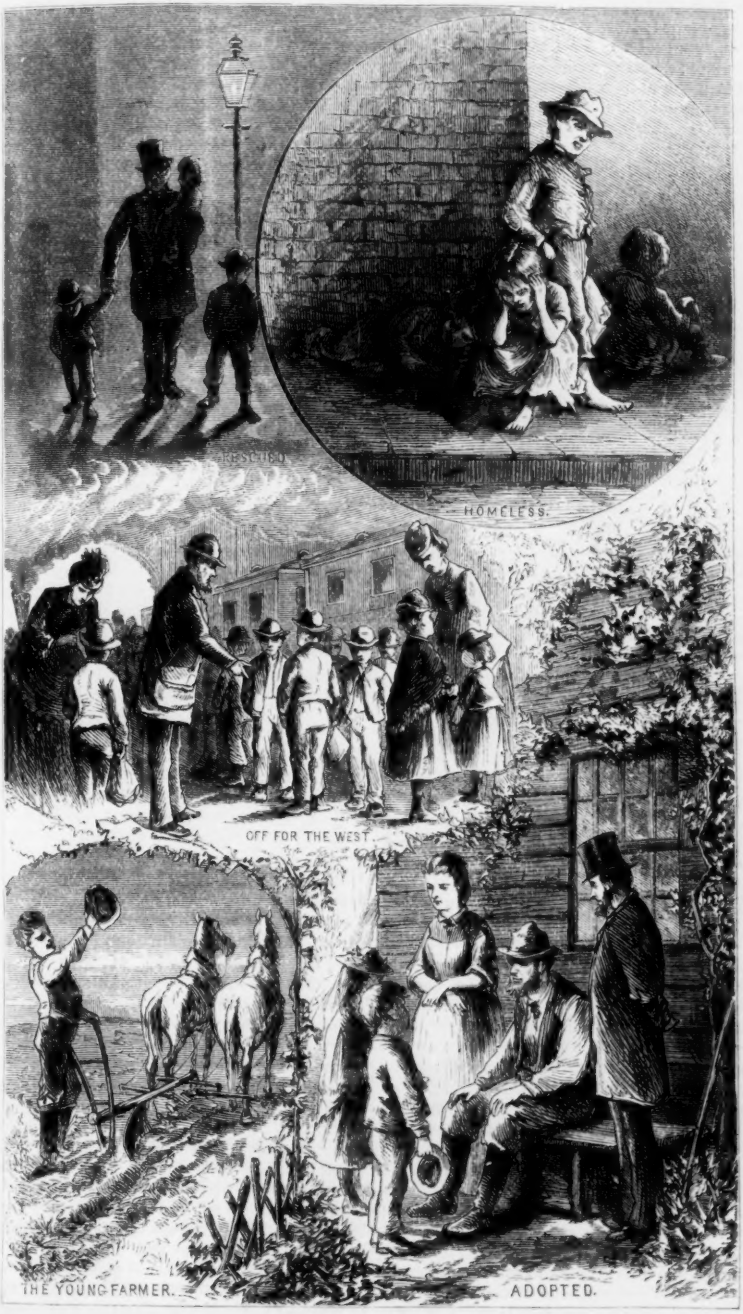
On a given day in New York the ragged and dirty little ones are gathered to a central office from the streets and lanes, from the industrial schools and lodging-houses of the society, are cleaned and dressed, and sent away, under charge of an experienced agent, to seek "a new home in the West." When they arrive in the village a great public meeting is held, and a committee of citizens formed to decide on the applications. Farmers come in from twenty to twenty-five miles round, looking for the "model boy" who shall do the light work of the farm and aid the wife in her endless household labor; childless mothers seek for children that shall replace those that are lost; housekeepers look for girls to train up; mechanics seek for boys for their trades; and kind-hearted men, with comfortable homes and plenty of children, think it is their duty to do something for the orphans who have no fair chance in the great city. Thus in a few hours the little colony is placed in comfortable homes. Subsequently, if changes should be necessary, the committee replace the children, or the agent revisits the village, while a steady correspondence is kept up by the central office with the employers. In this way something like 25,000 boys and girls have been placed in country homes during the past twenty years. Nearly 3000 a year are now sent forth by the society. Great numbers of these children have acquired property, or have grown up to positions of influence and respectability.

This association, not content with all these ingenious devices for the benefit of the working children, are now especially laboring to prevent the evil of overwork in factories. An act has been drawn up by their counsel, Charles E. Whitehead, Esq., and is now before the Legislature, designed for the protection of factory children. By this law no child under the age of ten years is allowed to be employed at all in a manufactory, and no child under the age of twelve, unless he can intelligibly read.

No child under the age of sixteen years is allowed to be employed more than sixty hours in one week, while four public holidays are secured to him. We think a humane amendment to this provision would have been the limiting of the day's work of children to eight hours. Other sections of a very stringent character secure to every factory child between the ages of ten and sixteen a certain proportion of education, either in night schools, half-time day schools, or by three months' annual schooling. Judicious exceptions are made in cases where a poor family is dependent on the labor of its children, in permitting such children to attend the night school instead of the usual day school.

Careful registers are required to be kept by the manufacturers or employers, showing the amount of schooling enjoyed by each child, the time of his labor in the factory, and other facts important for the execution of the law.

Humane provisions are also included in the act for the promotion of the good sanitary condition of the factories, and to protect the children from dangerous machinery.

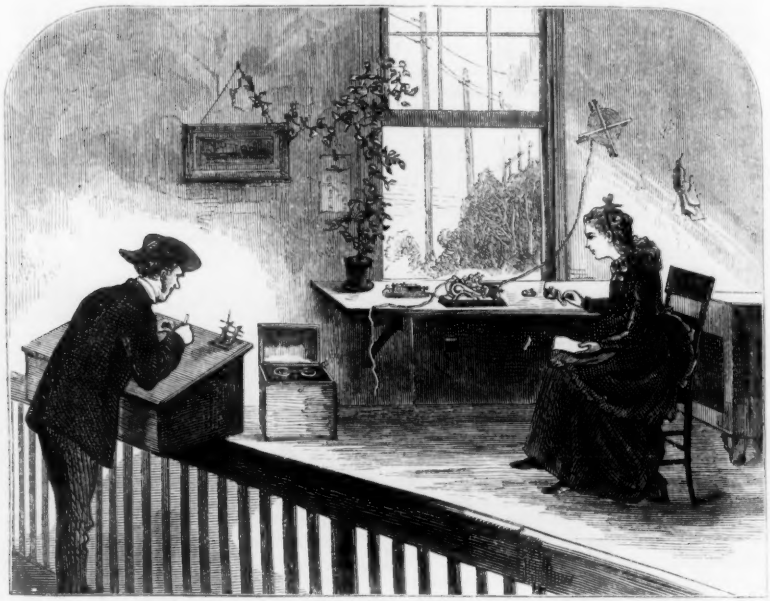


WORK OF THE CHILDREN'S AID SOCIETY.

Under the proposed law a new official has to be appointed by the Governor, to be called the "Inspector of Factory Children." Such an officer, acting under so wise and humane a law, can not but accomplish immense good throughout the State.

It is a matter deeply to be regretted that certain manufacturers in the State Legislature in Albany have not imitated their more enlightened and humane contemporaries in Massachusetts, and given their hearty support to so beneficent a measure. Instead of this, we are sorry to be informed that they are offering a factious opposition which may entirely defeat this act, and put New York in a very unfavorable position, as compared with the New England States, in her legislation to protect factory children.

THE TELEGRAPH.

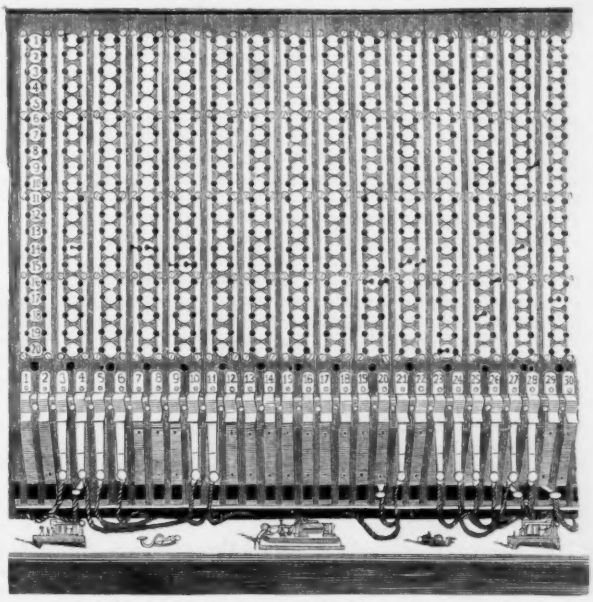


A TERMINAL STATION.

WHEN we look at a railroad map of the United States, with its intricate net-work of black lines, and in imagination fill it out with its double tracks, its junctions and busy stations, its dépôts and engine-houses, and then people and vivify the picture with its swarming and hurrying life and its gliding trains, ever making up, traversing the field, breaking and forming new combinations, incessantly succeeding, passing, and crossing each other; and when we add the bands of pioneers, surveyors, engineers, laborers, and construction trains which form the fringe of this net-work, constantly extending its meshes in every direction, and adding new intricacies to its most crowded parts—the mind is almost bewildered with the thought of such an immense labyrinth, such complex organization.

If we could rise above the surface of the earth, and take in the whole country at a bird's-eye view, with visual power to discern all the details, the net-work of the telegraph would be still more curious to look upon. We should see a web spun of two hundred thousand miles of wire spread over the face of the country like a cobweb on the grass, its threads connecting every important centre of population, festooning every great post-road, and marking as with a silver lining the black track of every railroad. We should observe men, like spiders, busily spinning out these lines in every direction, at the rate of five miles an hour for every working hour in the year. If we should trace these threads back from the circumference, we should find them converging from every direction to certain central knots, like Chicago, St. Louis, Cincinnati, Buffalo, Washington, and many others of equal importance, and thence running in great strands, doubling and multiplying in number as they approach the centre, but so arranged as to bind every city and town

to all its neighbors, near and far. If the eye, seeking to analyze this labyrinth, should pursue the converging lines, it would at last follow a great band of more than two hundred and fifty wires, from every point of the compass, running into one great centre in the city of New York, in the main office of the Western Union Telegraph Company. Other minor centres would appear, but this one would immediately be recognized as the great core or heart of the system.



ONE-QUARTER OF SWITCH-BOARD, WESTERN UNION OFFICE, NEW YORK CITY.

If, now, such an observer could be gifted with a magic power of vision, which man has not yet dreamed of attaining, so as to be enabled to see that unseen and silent force we call electricity, and discern its instantaneous actions and reactions from point to point over this bewildering maze, the net-work of the telegraph would present a spectacle far more amazing than that of the railroad system.

As the morning sun sends the hour of nine across the continent, the offices are filled with operators, an army of nearly ten thousand persons, engaged in the various functions involved in the service. The batteries, which we may imagine to have been mostly slumbering during the night, all awake to their work, and the quiverings and scintillations of electric action along the wires would show the whole net-work to be now alive. On the great trunk lines the last of the night work is finished, the morning orders are circulated, and around the circuit flash the humorous salutations which the operators exchange with their unseen fellows, who seem to be concealed at their elbow, but who are in reality hundreds or thousands of miles away. Ten o'clock finds the offices full of business. Outward-bound messages pour in to be dispatched, and messages received are ticked off by the talking armature, to be written out and sent off for delivery. By eleven o'clock the press news begins to crowd upon the operators, and then for two or three hours the excitement is at its height. Every one must be at his post, every faculty alert, and attention incessant. The zinc in the batteries burns fiercely under the corroding acid, the mysterious "current," which becomes more wonderful the more conscious we become of human ignorance respecting it, leaps to its work. Every available circuit on the great lines is pressed to its utmost. The operator's keys dance their tattoos, to which the distant receiving instruments instantly respond, reproducing the slightest, most transient motion. The whole net-work of wires, and the submarine cables which connect it with other equally active systems on the other side of the globe, are all quivering from end to end with signals of human intelligence.

After two o'clock signs of relaxation appear. The press messages diminish; messages that have been waiting to take their turn are cleared off. At four the heavy business of the day in many offices is about over. The great lines are still crowded, and their work runs on into the evening. At last the business of night work begins, and the press messages from Washington, and the business and social messages that are taken at half price, in consideration of their being allowed to be sent at leisure, to be delivered next morning, are transmitted between the great cities, north, south, east, and west.

Every phase of the mental activity of the country is more or less represented in this great system. The fluctuations in the markets; the price of stocks; the premium on gold; the starting of railroad trains; the sailing of ships; the arrival of passengers; orders for merchandise and manufactures of every

kind; bargains offered and bargains closed; sermons, lectures, and political speeches; fires, sickness, and death; weather reports; the approach of the grasshopper and the weevil; the transmission of money; the congratulations of friends—every thing, from the announcement of a new planet down to an inquiry for a lost carpet-bag, has its turn in passing the wires. Amidst all this private business perhaps some political incident of prime importance transpires at Washington, or some terrible casualty shocks Boston or Chicago. Almost instantly the knowledge of it reaches the nearest ganglion of our great artificial nervous system, and it spreads simultaneously in every direction throughout the land. Along every wire the same pulsations run, speaking their message upon all the instruments in a circuit at once. Thus, to borrow the striking figure of Scripture, quick "as the lightning that lighteneth out of the one part under heaven shineth unto the other part under heaven," an electric flash of intelligence spreads over the country, carrying a thrill of gratification or of grief.

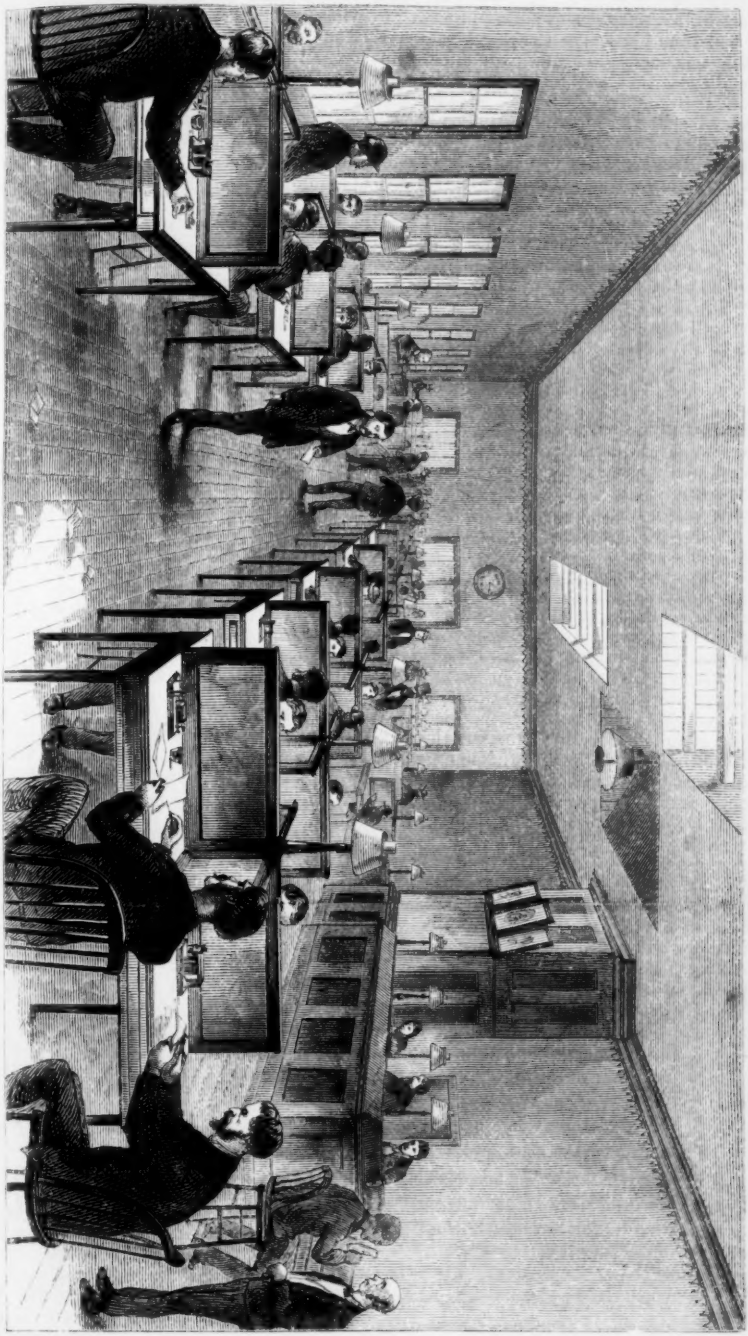
Our observer, if he could not only see the oscillations of electric condition, but also discern the meaning of the pulsations, and read the messages as they circulate, would thus have a panorama of the business and social affairs of the country passing under his eye. But the telegraph has now become so true a representative of our life that it would hardly be necessary to read the messages in order to find an indication of the state of the country. The mere degree of activity in the business uses of the telegraph in any given direction affords an index of the prosperity of the section of country served thereby. Mr. Orton, the president of the Western Union Company, gave a striking statement of this fact in his argument before a committee of Congress in 1870. He said: "The fact is, the telegraph lives upon commerce. It is the nervous system of the commercial system. If you will sit down with me at my office for twenty minutes, I will show you what the condition of business is at any given time in any locality in the United States. After three years of careful study of the matter, I am ready to appeal to the telegraph receipts as a criterion under all circumstances. This last year the grain business in the West has been very dull; as a consequence, the receipts from telegrams from that section have fallen off twenty-five per cent. Business in the South has been gaining a little, month by month, for the last year or so; and now the telegraphic receipts from that quarter give stronger indications of returning prosperity than at any previous time since the war."

The observer, whom we have supposed capable of seeing electricity, would find that the whole surface of the earth, the atmosphere, and probably the fathomless spaces beyond, were teeming with manifestations of the electric force. Every chemical process, every change of temperature, all friction, and every blow, in nature or in art, evolves it. The great process of vegetation, and the reciprocal process of animal life, all over the globe, are accompanied by it. As incessantly as the sun's rays pass around the earth, warming every part, in alternation with the cooling influence of night, great currents or fluctuations of magnetic tension, which never cease their play, circulate about the globe, and other, apparently irregular, currents come and go, according to laws not yet understood, while the aurora borealis, flaming in the sky, indicates the measureless extent of this wonderful power, the existence of which the world has but begun to discover. Our observer would see that these great earth currents infinitely transcend the little artificial currents which men produce in their insulated wires, and that they constantly interfere with the latter, attracting or driving them from their work, and making them play truant, greatly to the vexation of the operators, and sometimes to the entire confusion of business. If a thunder-storm passed across the country, he would see all the wires sparkling with unusual excitement. When the rain fell, and water, which is a conductor, trickled along the wires, and stood in drops upon the insulators, he would see the electricity of the line deserting its path, and stealing off slyly, in greater or less quantities, over the wet surface of the insulators, or by the wet straws or kite strings that sometimes hang across the line. Now and then he might see the free electricity of the storm overleap the barriers, and take possession for the moment of some unguarded circuit, frightening operators from their posts.

Such an observer would realize, what it is difficult adequately to conceive, that electricity is, as has been said, the great hidden force in nature, and still remains, so far as man is concerned, almost dormant. A high scientific authority has remarked, in speaking of metals, that the abundance of any object in nature bears a proportion to its adaptation to the service of man. If this be true in general, we may expect that electricity will become one day a most familiar thing.

With the exception of those general readers whose taste or course of reading has led them somewhat into scientific paths, there are not many persons who find it easy to form a definite idea of the precise mode of action by which a telegraphic wire conveys its messages—so multitudinous and varied in their character, and transmitted with such inconceivable rapidity.

We are, it is true, most of us somewhat farther advanced in our ideas on the sub-



OPERATING-ROOM OF THE WESTERN UNION COMPANY, NEW YORK.

ject than the good old lady was who, when a telegram was brought to her purporting to come from her son, and asking her to send him some money, said they could not swindle her in that way, for she knew her son's handwriting perfectly well, and she was sure that dispatch never came from him; or than the child who, hearing that dispatches of various kinds were sent by telegraph, watched a long time in hopes of seeing some of them darting along the wires. Still, to the mass even of intelligent and well-informed readers, the precise mode in which the communications are made is a mystery more or less inscrutable.

The difficulty of forming a clear conception of the subject is increased by the fact that while we have to deal with novel and strange facts, we have also to use old words in novel and inconsistent senses. Scientific men have, of course, found it necessary, in describing the phenomena of electricity, to use words which mankind have heretofore used to designate other things of somewhat analogous nature, and which call up in the mind conceptions quite inadequate to the new fact. Thus, when it is said that a current of electricity *flows* along the wire, that the wire or the current *carries* a message, the speaker takes language universally understood, relating to a fluid moving from one place to another, and a parcel or letter transported from place to place. He does not, however, mean that there is any stream flowing, or any thing whatever transported, but he is speaking only of the action and reaction of an imponderable force, and the making of intelligible signals by its means at a distance. Such language the world must, perhaps for a long time to come, continue to employ; and it is not strange that those to whom the subject described by it is entirely new should be sometimes laughably misled by it.

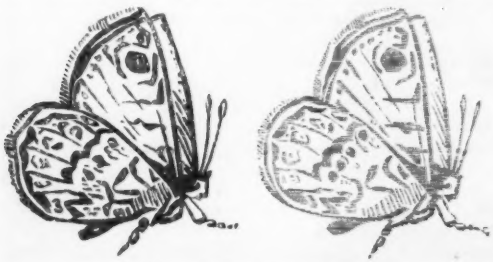
Not long since a countryman came into a telegraph office in Bangor, Maine, with a message, and asked that it be sent immediately. The operator took the message as usual, put his instrument in communication with its destination, ticked off the signals upon the key, and then, according to the rule of the office, hung the message paper on the hook with others that had been previously sent, that at night they might all be filed for preservation. The man lounged around some time, evidently unsatisfied. "At last," says the narrator of the incident, "his patience was exhausted, and he belched out, 'Ain't you going to send that dispatch?' The operator politely informed him that he had sent it. 'No, yer ain't,' replied the indignant man; 'there it is now on the hook.'"

So far as the exact use of language was concerned, the man was right. Still more ludicrous mistakes sometimes occur. Thus the German papers reported that at Carlsruhe, toward the close of the late war, an aged mother came to the telegraph office carrying a dish full of sauerkraut, which she desired to have telegraphed to Rastadt. Her son must receive the kraut by Sunday. The operator could not convince her that the telegraph was not capable of such a performance. "How could so many soldiers have been sent to France by telegraph?" she asked, and finally departed grumbling.

Almost every operator meets with equally amusing instances. One recently related the following incident: "A gentleman came to my office to send a message, and after writing it, waited, as people often do at small offices, to see it sent. I called 'Office,' and the operator at the other end of the line came to the key and said, 'Busy—wait a minute.' So I leaned back in my chair to wait, when the gentleman said, 'Have you sent it?' I said, 'No; they say they are busy—to wait a minute;' whereupon he said, looking surprised, 'Why, I didn't hear them;' and then added, brightening up, as if he had thought of the reason, 'but I'm *a little deaf in one ear!*' I think I managed to keep a straight face till he left, but it was hard work."

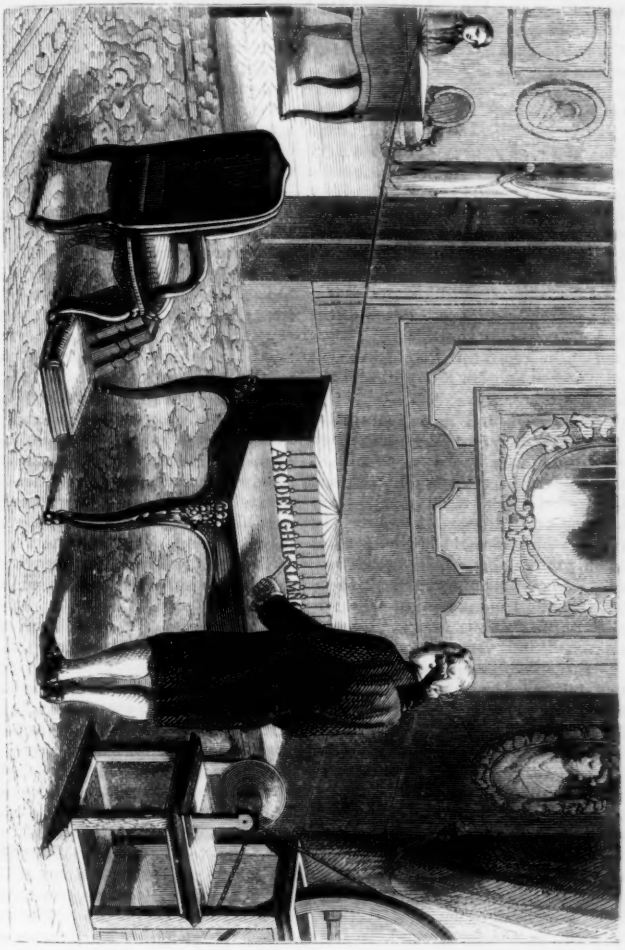
It may make this distinction more clear if we advert to the transmission or production of designs, drawings, etc., by telegraph.

There is an instrument, which we shall hereafter briefly describe, by which this can be done. We should not, however, say, in the case, for instance, of the butterfly in the illustration, that a butterfly was sent by telegraph, nor even that a picture was sent. The operator, being furnished with one picture, created another like it, hundreds of miles away, by means of the telegraph.



A PICTURE PRODUCED BY CASELLI'S INSTRUMENT.

The first step in endeavoring to understand the operation of the telegraph is to learn to make allowance for the new sense in which many terms are employed, and to form a new conception for each, more appropriate to the new fact. Thus, though we



continue to speak of the current, it must always be understood as not designating a flowing fluid, and we are not to conceive of the electricity as carrying the message that we write, but rather as enabling the operator at the other end of the line to write a similar one.

Nearly two hundred and fifty years ago, when men were still dreaming of alchemy and the philosopher's stone, they conceived of two sympathetic needles which, instead of always pointing toward the north pole, should be so powerful in relation to each other that in whichever direction one was turned, the other would imitate its motion.

Strada, an ingenious and learned Jesuit of Rome, is quoted as having said, in describing this project, "If you wish your distant friend, to whom no letter can come, to learn something, take a disk, or dial, and write round the edge of it the letters of the alphabet in the order in which children learn them, and in the centre place horizontally a rod, which has touched a magnet, so that it may move and indicate whatever letter you wish. Then, a similar dial being in the possession of your friend, if you desire privately to speak to the friend whom some share of the earth holds far from you, lay your hand on the globe, and turn the movable iron as you see disposed along the margin of all the letters which are required for the words. Hither and thither turn the style and touch the letters, now this one, and now that.....Wonderful to relate, the far-distant friend sees the voluble iron tremble without the touch of any person, and run now hither, now thither: conscious, he bends over it, and marks the

teaching of the rod. When he sees the rod stand still, he, in his turn, if he thinks there is any thing to be answered, in like manner, by touching the various letters, writes it back to his friend."

This conceit, which Addison, in No. 241 of the *Spectator*, delicately ridicules as a chimerical notion, has proved to be a very graphic description of Wheatstone's needle telegraph, so well known in England. If we add that the needles are kept in this sympathy with each other by a wire stretched from the stand of one to the other, so that whatever electrical disturbances affect the wire affect both needles alike, the reader will have a more accurate conception of the elementary principle of the telegraph than by any notion he can form of a current sent from one place to another along a conducting wire.

About a hundred and fifty years after Strada wrote—namely, in 1774—a successful attempt was made by Lesage, a philosopher of Geneva, to establish a real and physical connection between two distant places by means of frictional electricity, the only form in which electricity was at that time known.

The engraving shows the construction of his apparatus, and the manner in which it operated, though, of course, on a small scale, as the distance is only from one room to another. The rope which forms the medium of communication between the two stations is formed of wire. It consists of twenty-four strands, one for each letter of the alphabet. These strands are insulated from each other in the rope, by being each covered with some non-conducting substance, and the ends are separated at each station, and made to diverge over a table of glass or other non-conductor; and finally, the extremity of each strand terminates at each station in a pith-ball electrometer, which hangs over the letter that that strand represents.

On the right, in the foreground, is seen an electric machine for producing frictional electricity.

The arrangement of the separated ends of the wires at the farther station, and their connection with the pith balls and the letters, are the same as at the station in the foreground.

The operator at the hither end of the line has now only to make a connection by means of a discharging rod between the conductor of the electric machine and any one of the wires. The wire, being insulated, becomes electrified through its whole length, and indicates its condition by means of the pith ball at the farther end, and so points out to the observer there the letter that is intended. In this way, of course, by designating different letters in succession, any desired communication could be made.

This method was founded on correct principles, and for certain very short distances it was practically successful. It could, however, never be any thing more than a philosophical toy, on account of the difficulty of transmitting the electrical influence, *in that form*, to any considerable distance. Those characteristics of frictional electricity which are ascribed to what is termed a condition of *great intensity*—whatever that may mean—make it very difficult to insulate a conductor of any great length or extent of surface, employed to contain or transmit it. Lesage's apparatus could not be made to operate except for very short distances—too short altogether to make it of any practical use. It was not until after the discovery of a form of electricity of extremely *low* intensity—so low as to allow of the easy insulation of thousands of miles of wire—and the discovery of the relations of electricity and magnetism, by which two magnets thousands of miles apart can be put into communication with each other, and made to act synchronously, that the invention of the electric telegraph, as now constructed, became possible. The invention of Lesage, however, taken in connection with the fantastic idea of Strada, may be considered as in some sense the embryo and prototype of the modern marvel.

The histories of the inventors of the telegraph are more or less familiar to many readers, and without pausing to recount them here, let us pass to some account of the features of the system now in use.

If one should cut the wire as it hangs between two telegraph poles, and take one end in each hand, he would feel a slight succession of shocks, as the impulses of electric force by means of which the signals are made would course through his arms from one hand to the other. What this subtle force *is*, no one knows. Some of its properties are now understood, but the thing itself eludes our cognizance. The only difference between those least acquainted with the subject and the professional electricians who devote their lives to the study of it is that with the latter the mystery, without being less, lies deeper. In respect to the operations of electricity, as is true, in fact, in respect to all the operations of nature, though scientific men may succeed in tracing the steps of the process a little way, they are sure to come to the region of inscrutable mystery at last. As one has well said, the further the radius of investigation is extended, the greater appears the circumference of the unknown beyond.

There are certain general principles, however, on which the phenomena of the electric telegraph depend, which are also exemplified in a great many of the most important processes going on around us in nature and in art, which it affords great pleasure to all who love knowledge for its own sake

to understand, though it must be confessed that the understanding of them is not of any practical importance in enabling us to transact our business at a telegraph office.

One of the most important and most fundamental of these principles is this, namely, that whatever force is expended in separating from each other two substances that are found naturally united, is given out again when the substances once more come together. Thus, if a weight is raised for a certain distance above the earth, a certain force being expended in the raising of it, precisely that amount of force, neither more nor less, will be exerted by the fall of the weight back to its original position.

And in the same manner, whatever force has been expended in separating the particles of two substances which are united by a strong chemical affinity is precisely restored when they are allowed to come together again. The most common case of such separation and reunion consists in the abstraction of oxygen—which is the great substance in nature that has the strongest affinity for almost all other substances—and the return of the oxygen to its original combinations again. In this return it gives out, of course, the force which was expended in the separating of it. This force usually reappears in the form of *heat*, and in cases in which the action is very intense—that is, in which the force is made to reappear in a very rapid manner—heat and light combined, thus producing the phenomenon which we call combustion.

Under some conditions, however, the restored force appears in the form of *electricity*. Of the inner and intrinsic nature of this form of energy we know very little. Still a great deal, comparatively, is known of the effects which it is capable of producing, and the cause producing them was formerly supposed to be a distinct and specific substance. When, however, it was at length found that the development of the electric action was always accompanied by the expenditure of some form of force, and that the force in which it thus originated disappeared just in proportion as the electric agency was developed, and, moreover, as the electric agency could be made to produce again the forms of force in which it originated, disappearing itself as the others reappeared, the conclusion was apparently inevitable that the effects are produced not by the *transfer of a substance*, but by the agency of some one of the numerous forms which the mysterious principle of force is continually assuming.

That which passes along the wires, therefore, is simply *an impulse of force*.

This force must not, however, be conceived of as a single force: it exists in two forms or phases, having a very remarkable relation to each other. Many years ago, when electricity was generally supposed to be a separate substance, permeating all ordinary objects, there were supposed to be two kinds, which were described as two fluids. Any object electrically excited was said to be charged with an excess of the one fluid or the other, sometimes the "vitreous fluid," sometimes the "resinous fluid." And a discharge or current of electricity was understood to be the disturbance caused by these two fluids in coming together again and neutralizing each other. The ordinary condition of objects not electrically excited was explained by regarding them as charged with both fluids in equal degree. Franklin sought to explain the same phenomena by the simple theory that there was only one fluid, that vitreous electricity was an excess of this one fluid over the natural amount, and that a deficiency was resinous electricity. He accordingly called the one "positive" and the other "negative;" and he described a current or discharge as the act of the excess contained in an overcharged object passing to an object which was undercharged, thus restoring the natural or ordinary equilibrium in both.

The invention of the galvanic battery was developed during periods when these theories were in vogue, and the terms "current," "positive electricity," and "negative electricity" were accordingly adopted in the language used to describe the action of the battery, and still continue in use to some extent, and although literally inappropriate, we shall have constant need to employ them in the following pages.

In a recent article in the *Journal of the Telegraph*, Mr. Prescott, the electrician, describing the propagation of electricity, compares it to heat, in the following language: "Toward the end of the year 1859, M. Gaugain, an able electrician, who had for some time occupied himself in verifying the laws of Ohm in regard to the transmission of electricity over bad conductors, sought to solve the causes of this disaccord [alluding to disaccord of scientists who had not accepted Ohm's laws], and at last found the key to the enigma. He became convinced that electricity, instead of being propagated as a wave, or in a manner analogous to that of sound or light, was, on the contrary, transmitted, as stated by Ohm, in the manner of heat in a metallic bar, which is hot at one end and cold at the other. In this case the heat and the cold communicate from place to place gradually from the two extremities of the bar, and in proportion as this double movement of heat and cold is propagated toward the middle of the bar the parts first heated and cooled acquire and lose a quantity of heat, until, the two calorific movements having met each other, the different points of the bar lose on one side as much heat as they gain on the other. Then the calorific equi-

librium is established, and the distribution of heat upon all parts of the bar remains the same. This is what is called the permanent calorific state. But before a metallic bar arrives at this state it requires more or less time, according to its calorific conductivity, and this time, during which every point of the heated body unceasingly changes in temperature, constitutes a variable period, which, if the assimilation of the propagation of heat with that of electricity is true, ought to exist in the first moments of the transmission of a current; for, in this hypothesis, an electric current is only the result of the equilibrium which tends to establish itself from one extremity of the circuit to the other, between two different electric states constituted by the action of the battery, and representing, consequently, the two different temperatures of the heated bar."

This comparison will afford better elements for forming a conception of the electric force than the notion of fluids and currents.

The battery is the source of power for the telegraph, and in this respect it may be compared to the boiler in the steam-engine.

It is now believed that all chemical action, however slight, gives rise to a development of electricity; and a battery is an arrangement of metals and acids combined in such a form as to cause a powerful chemical action. The electric result is greatest when two metals are used one of which is strongly and the other slightly acted on. If two such pieces of metal are connected by a conducting wire, positive electricity moves or acts from the former metal through the acid to the latter metal, leaving the negative force in preponderance in the former metal. The positive electricity does not, however, remain quiescent in the second metal; it passes out by the conducting wire, and returns to the place of its origin in the first metal, where it is neutralized as fast as it arrives by the negative electricity there accumulated.

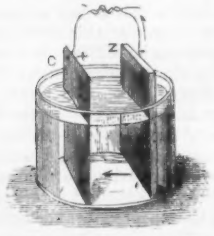


FIG. 1.—THE VOLTAIC PAIR.

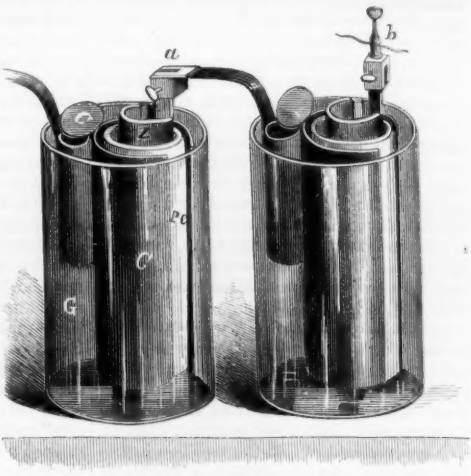


FIG. 2.—THE DANIELL BATTERY.

G is the glass or earthen jar, which is nearly filled with a saturated solution of the crystals of blue vitriol (sulphate of copper). If a bit of white paper is dipped beneath the surface of the liquid, the color of the liquid is very apparent, for it makes the paper look blue. C is a plate of copper, bent into a cylindrical form so as to fit loosely within the outer vessel. It has a pocket or chamber of copper, fastened to the upper part, with a perforated bottom, into which fresh crystals of vitriol are thrown from time to time to renew the strength of the solution. These crystals might as well be thrown to the bottom of the jar, were it not that by being dissolved near the surface they keep the solution of nearly equal strength throughout, instead of making it much the strongest at the bottom. P C is the porous cup, about two inches in diameter, which stands within the copper cylinder. It is nearly filled with soft water, or salt-water, or sometimes with a solution of sulphate of zinc. Z is the plate or block of zinc. This is made in various forms—a hollow cylinder being more powerful, on account of its greater surface, but more difficult to clean, than a plain strip. A binding screw (*b*) at the top of the zinc plate receives the negative pole wire. A strip of copper fastened to the copper cylinder, and provided with a binding screw (*a*), receives the positive pole wire, or serves to make connection between the copper of one "element" (as each jar or each pair of metals is called) and the zinc of another, when it is desired to unite several jars, or elements, to gain additional force.

This arrangement is shown in Fig. 1.

Here, in a glass vessel, are inserted, on the right hand a plate of zinc, and on the left a plate of copper (lettered respectively Z and C). The conducting wires, or pole wires, are brought around, and touch each other above. If, now, the vessel is filled with diluted sulphuric acid, the liquid begins to corrode the zinc—it burns it, so to speak—and gradually dissolves away the surface. This chemical action consists largely of the oxygen of the water leaving the particles of hydrogen with which it was united, and combining with the zinc. The force that is evolved in this change, as above explained, is in the form of positive and negative electricity. These, separating from each other, pass out of the battery, one going through the fluid to the copper and thence to its wire, and the other in the opposite direction, and they meet and seek to recover their union and equilibrium in those parts of the circuit where no chemical change is taking place.

Meanwhile the process of evolving more positive electricity upon the copper and more negative upon the zinc goes on, so that a continuous current is said to flow from the battery. The point of contact where the positive electricity leaves the battery for the conductor is termed the positive pole, the other the negative. The course of the currents is indicated in the figure by arrows.

FIG. 3.—REPLENISHING THE BATTERY.

The force generated by a battery of so simple construction as this soon becomes weak from the decomposition of the liquid and other causes. To remedy this defect several batteries have been devised which are constant in their force. These are usually designated by the names of their inventors. Daniell's and Grove's are the two forms perhaps most generally used in this country.

The Daniell battery is the one commonly used in small offices for the local purposes which will afterward be explained.

In Grove's battery, which has long been in use at the great central offices for the principal supply of the main lines, the outer vessel is filled with diluted sulphuric acid, and in this the zinc plate is immersed. The porous vessel placed within the zinc plate is then filled with strong nitric acid, and in this a plate of platinum is immersed. The platinum here takes the place of the copper used in the other form of battery.

The object of the porous cup in both these batteries is simply to separate the two liquids without intercepting either the chemical action between their constituent elements or the electric current. A very beau-

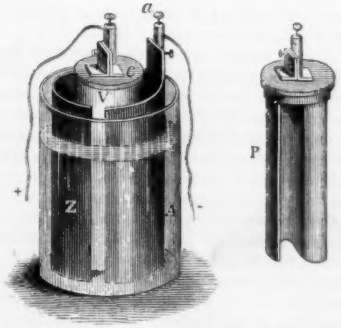


FIG. 4.—A CELL, OR PAIR, IN GROVE'S BATTERY.

A, glass vessel partially filled with dilute sulphuric acid; Z, cylinder of zinc; V, vessel of porous pipe-clay, containing nitric acid; P, plate of platinum, bent in the form of an S, and fixed to a cover, *c*, which rests on the porous vessel; *a*, binding screw.

FIG. 5.—THE CALLAUD BATTERY.

C, the copper plate, with crystals of sulphate of copper lying on it; B, solution of sulphate of copper; D, solution of sulphate of zinc; Z, zinc suspended in the latter solution; *a*, positive pole wire, connected with copper plate; *b*, negative pole wire, connected with zinc.

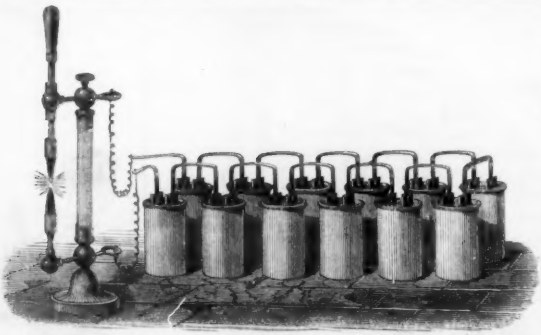


FIG. 6.—A BATTERY OF TWELVE ELEMENTS.

tiful improvement is presented in the Callaud battery, in which the chemical solutions are placed in a single jar. One solution being saturated, and heavier than the other, sinks to the bottom, where the copper plate lies. The lighter solution, diluted, fills the upper part of the glass, and in this the zinc is suspended.

To gain the intensity of force necessary for main lines, a number of these cups or cells with their respective pairs of metals are united by connecting one pole of each to a pole of its next neighbor. Each cell or pair is termed an "element." For instance, a battery of fifty elements means one composed of so many jars thus united.*

Many persons have noticed that a humming sound—a low musical note—sometimes proceeds from the telegraph wires as they hang stretched upon the poles, which is caused by the wind playing upon them as upon the strings of an Æolian harp. Even when the wind is light, the sound can often be heard by applying the ear closely against the pole. Some persons have erroneously attributed this sound to the electric current. That it really proceeds from a vibration of the wires, strung as they are, may be proved, when there is no wind, by punching the pole with the end of a cane or umbrella so as to jar it slightly, and the same sound may then be heard given forth by the trembling wires.

A very strong wind sometimes, by tightening the wire, stops its vibration. The power of the wires to carry their own resonant sound to a distance enables an operator at an office sometimes to hear men working upon the wire miles distant. It is related that at the time of the completion of the telegraphic line to the Catskill Mountain House strong winds prevailed for a few days, causing a peculiarly loud humming noise of the wires. At length the wind died away, and the telegraphic Æolian harp was mute. Several days thereafter the proprietor of the Mountain House, on his way to Catskill, reined up in front of the Half-way House to water his horses, when he was accosted by the Kiskatom landlord: "How's things on the mountain?" "Lively," was the response. "Ain't doin' much telegraphin', are you?" "Oh yes; the line is quite well patronized." "Well, I didn't think so; *I ain't heerd a dispatch go up in three or four days.*"

In truth, the mysterious form of force which we call a current of electricity passes along the wires of the telegraph both silent and unseen. The clicking that is heard in the operation of the telegraph instruments is not the voice of electricity. Just as the force of gravitation pulls in perfect silence upon the weights and pendulum of a clock, and it is only by the resistance which the escapement incessantly interposes to the revolution of the toothed wheels that the tick of the clock is produced, so the electric current, though it sets in motion the tapping armature, is itself silent.

This noiseless and invisible force acts with inconceivable rapidity. The celerity of its passage varies somewhat with the appropriateness of the conductor which forms its path; but the movement is so

* Those who wish to pursue this subject will note a distinction here, which only professed electricians fully understand, and, indeed, on which the best authorities seem not to be fully agreed—the distinction between intensity or degree of tension of electricity, and the quantity of electricity. The nature of the distinction may be illustrated thus: If there were a ball of iron as large as this earth, and a common cannon-ball, both heated red-hot, the *degree* of heat in both would be the same, but the *quantity* of heat in the great globe would be vastly larger than that in the cannon-ball. The thermometer measures intensity or degrees of heat, though it does not measure the quantity or amount. There is a somewhat similar distinction in respect to electricity. The earth is charged with electricity to a certain degree or tension. If a cannon-ball lies on the ground in contact with the earth, it will be charged with electricity in the same intensity. But the quantity contained in the earth is vastly greater than that in the cannon-ball.

Increasing the size of a cell or pair, or—what produces the same effect—connecting all the zincs of several elements together, and all the coppers together, increases the quantity of electricity evolved without increasing its tension. Increasing the tension is accomplished by connecting the zinc of each element with the copper of its next neighbor.

Frictional electricity, or the free electricity of the thunder-storm, is found to be the same as magnetic electricity, except that it is of a very high degree of tension, and can not be produced in sufficient quantities, nor can the lines be sufficiently insulated, to make it available for telegraphs, as Lesage attempted to do. Its tension being very high, the degree of resistance which effectually insulates galvanic electricity is not a barrier for it, and it escapes from the wires.

nearly instantaneous that practically the only delay, even on the longest lines, is in the intervals of time occupied by the operator at one end in setting the successive pulses of the current in motion, and by the operator at the other in observing almost at the same instant their passage.

The force which passes from a battery over the wires, though it moves with such marvelous rapidity, and though, so far as we can picture it to our imagination, it consists simply of some vibratory or quivering motion among the particles of the wire, is really much greater in amount than one would be inclined to suppose. The particles of oxygen and hydrogen, for example, as united in water, are held together by an immensely powerful attraction, and a very great force is necessary to separate them. This force, or *energy*, as it is technically called, is all given back when the separating particles come together again in the process of combustion, by which the water is re-formed. It is the same with the particles of oxygen and those of zinc. A great force, though it is a force acting through very minute distances, is expended in separating the oxygen from the zinc in the ore, to form the metallic zinc used in the batteries. All this force is given back when the oxygen is restored, and under the conditions in which the restoration takes place in these batteries the restored force reappears in the form of electricity. It is said that the annual cost of the maintenance of the batteries used by the Western Union Telegraph Company—that is, for the supplying the force which is expended in the electrical pulsations which pass over their wires—is over $125,000.

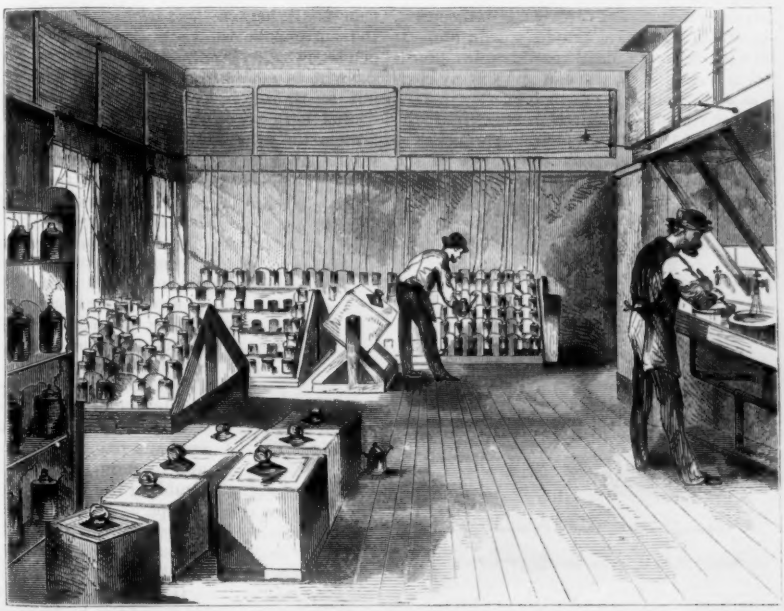
When this current and the means of producing it became known to the world, many minds busied themselves with the thought of sending messages to a distance by means of extending the wire circuit, and a great variety of devices were tried for this purpose.

One inventor arranged a key-board with ten keys, one for each finger, and with ten wires, one communicating with each key. The operator who was to receive the message sat with fingers and thumbs upon the keys, and received a little shock in one after another of his digits, each of which he interpreted to mean a certain letter, according to a prearranged table.

Another proposed to resort to the light and heat which are developed when the electric current is made to pass from point to point of two pencils of charcoal, in connection with the opposite poles of the battery.

To form an intelligent idea of the principle of the telegraphs now in use it is necessary to advert to a very peculiar property of electricity, which constitutes, in fact, one of the most curious and singular facts in nature.

If a current of electricity is passed along a wire near to a compass or magnetic nee-



VIEW OF THE BATTERY OF THE WESTERN UNION TELEGRAPH OFFICE IN NEW YORK.

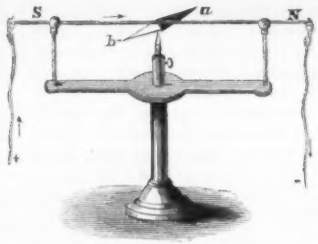


FIG. 7.—THE DEFLECTION OF THE NEEDLE.

dle, without however touching it, it will cause the needle to turn and take a position at right angles to the wire, or to tend toward such a position in a degree proportioned to the strength of the current. If the current is passed in a similar manner across a bar of soft iron, without touching it, it causes the iron to be a magnet; that is to say, the proximity of the current will make iron that is not a magnet become one, and will make iron that is a magnet turn at right angles to the current. When the current ceases the needle returns to its ordinary position, the bar ceases to be a magnet. Singularly enough, if the wire is suspended so as freely to turn, and a magnet is laid beneath it, the wire will turn so as to cross the direction of the magnet.

This power of the current to make a temporary magnet of every piece of soft iron within its influence, and to turn magnetic needles at right angles to itself, is the property resorted to, under one form or the other, in nearly all the telegraphs now in use. It is a mysterious sympathy, which has afforded to scientific observers a great many curious and beautiful experiments.

If a double current is carried past the needle or bar of iron, double the effect is produced. To enhance the power of the current, therefore, a coil of wire passing around the bar or needle is commonly employed. Thus Fig. 9 represents a rod of soft iron inserted within a spiral coil of a conducting wire. The effect of the coil is to make the path of the wire lie across the rod for a long distance, and the magnetism of the bar is very perceptible. If the spiral is right-handed—that is, if it runs like the thread of an ordinary screw—the north pole of the bar will be at the end at which the positive current emerges, the south pole at the end at which it enters. Whenever the current ceases the bar loses its magnetism. If both spirals were wound on the same bar, and equal currents sent through them, the influence of one upon the bar would be counteracted by that of the other, and it would not become a magnet.

The attractive power of both poles can be used at once, if the rod and coil be bent into the form of a horse-shoe, and can be shown by its lifting iron pins from a tray, or holding even a heavy weight.

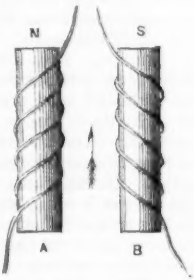


FIG. 9.—THE SPIRALS.

A, a right-handed spiral; B, a left-handed spiral; N, north pole; S, south pole.

But if in the construction of such a magnet the wire is wound in the wrong direction on half the bar, the two parts neutralize each other. Which end of the iron shall become the north pole depends on whether the wire is wound from right to left or from left to right. If even the same wire is wound both ways, the one influence counteracts the other. It must be made as if wound on a straight shaft, and afterward bent. The effect is not produced if the bare wire is wound on the bar, returning on itself, like thread on a spool; the wire is therefore always covered with silk or some other insulator, so that each turn is separated from the others, and the current is compelled to follow the entire length of the wire.

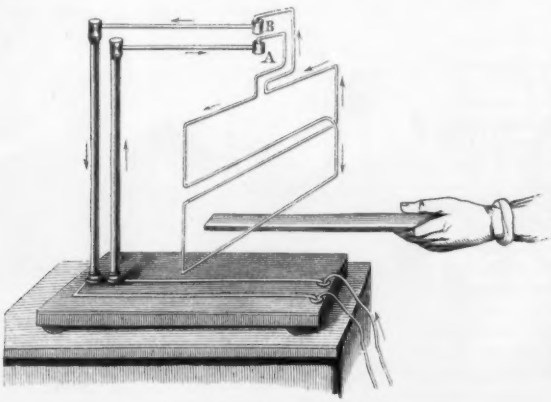


FIG. 8.—DIRECT ACTION OF A MAGNET ON A CURRENT.

These two spools, covered and painted black, and in form rudely resembling the barrels of an opera-glass, may be recognized in the instruments in any telegraph office.

If the line is not too long, and the battery is

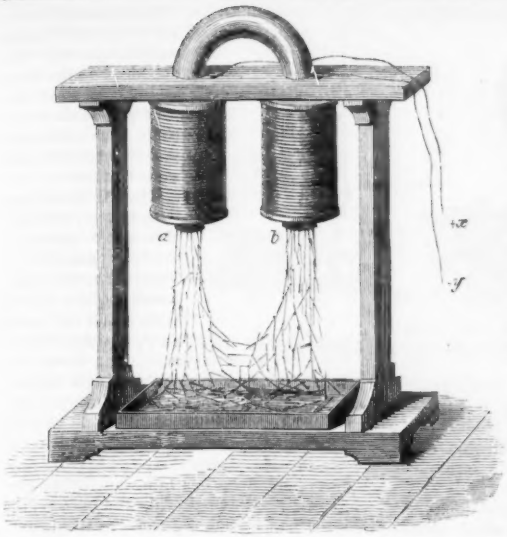


FIG. 10.—THE ELECTRO-MAGNET.

sufficiently powerful, the magnet may be made to attract an armature, or bar of iron suspended near it, and the armature in moving may sound a bell. Fig. 12 represents an alarm-bell of this kind, which has been much used in Europe. The wire may be traced entering the apparatus at A. Being fastened there with a thumb-screw, it is in contact with the wire coiled around the magnet at B. The other end of the wire coil is connected with a metallic rod in the bottom of the case, to which the spring that supports the armature is affixed. The other wire of the line enters from the other side, and is fastened to a thumb-screw from which rises a slender tongue of metal against the armature. When the current is established through wire, coil, armature, spring, and wire again, the magnet attracts the armature, and the hammer, G, strikes the bell, H. But the armature, by the act of leaving the spring, F, breaks the circuit, for the current can no longer pass from the armature to the line wire. The horseshoe bar therefore ceases to act as a magnet, and the armature falls back to its place. The instant it touches the spring, F, the current is again established, the magnet acts, the bell strikes, and so again, thus ringing like an alarm-clock. As seen in Fig. 15, the armature, instead of ringing a bell, may be made to move a pencil or a pointed stylus, and make a mark upon a moving strip of paper.

In the dial telegraph the armature moves a lever which drives a rachet-wheel, and this carries an index, or pointer, by which words are spelled out on the dial. If we imagine the circumference of the wheel to bear type, so that each letter could in turn be printed, we have a clew to the principle of the little stock telegraph instrument which may be seen at work any day printing off quotations in any broker's office or great hotel in New York.

It has been said above that the current does not actively manifest itself unless the two poles of the battery are connected by a conductor. When this connection is broken, the current ceases to flow, not only at the point where the break is made, but in every other part of the wire at almost the same instant.

Those who have attended an experimental lecture upon electricity may have witnessed, or perhaps participated in, the formation of a ring by those members of the audience who were willing to try a shock. The person at one extreme takes hold of the chain connected with the conductor, but no sensation is felt until the one at the other extreme touches the opposite pole of the machine. So far as manifestations in the sensation of the circle show, the

FIG. 11.—THE BOBBINS.

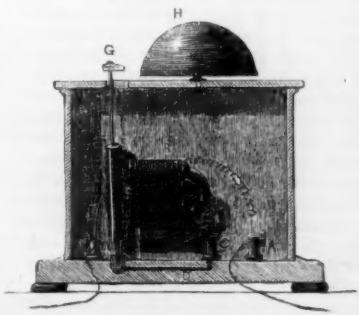


FIG. 12.—THE ALARUM.

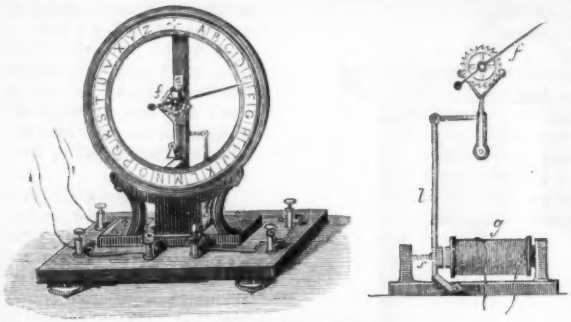


FIG. 13.—THE DIAL TELEGRAPH.

g, The bobbins; *s*, spring to draw back armature; *l*, lever; *f*, index.

electricity seems not to start at all until it can go entirely around. The instant the connection is formed the electricity, so to speak, discovers that the course is clear, and flashes through the whole circuit of outstretched arms and hands.

Electricity, like light, heat, and sound, requires time for its passage through space; yet so rapid is its motion that it was formerly supposed that it could not be timed, but recent experiments have succeeded in doing so. The wires between Cambridge, Massachusetts, and San Francisco were connected several years ago, making a circuit of over 7000 miles, with thirteen repeaters. The time required for the flow of the current was seventy-four-hundredths of a second, or, deducting the time required to open and close the repeaters, about three-tenths of a second, or at the rate of 1,400,000 miles a minute. The rapidity of the motion is shown by the following illustrations:

If a magnetic spark is flashed through gunpowder, it may scatter the kernels of powder without igniting them. If a silvered wheel is made to revolve many thousand times a minute, the spark will show it at rest. If a man be struck by lightning, death appears to follow before sensation has time to reach the brain through the nerves.

The signals, whether by means of the needle or the electro-magnet, are made by a succession of shocks or pulses; and to produce these it is necessary to break the circuit and to close it again many times in succession. Cutting the wires of a telegraph, which we used to hear of when there were fewer lines than now, stops communication. When the ends of the wire are fastened together again, communication is re-established. If no instrument for making the signals is at hand, as is sometimes the case, the signals can be made by taking an end of the wire in each hand, and touching them together again and again. Insulation may be preserved by wearing silk gloves, or using a silk handkerchief.

The genius of Morse showed itself in the simplicity of the means he devised; and it is to their simplicity that they owe their pre-eminence and their almost universal adoption.

The Morse key, or transmitter, which is the name given to the instrument he devised for making and breaking the circuit with speed and accuracy, is simplicity itself; but upon this little lever, capable of but a single motion, may be expressed every word the pen can write or the tongue speak. It will be most readily understood, perhaps, by a drawing of a rude form in which it was at first made.

The reader who has followed these somewhat dry details respecting the battery, the instantaneous current, the electro-magnet signals, and the mode of making the circuit and breaking it again, is prepared to understand the "circuit," and to trace the operation of the telegraph upon it.

It has already been said that a complete circuit must be formed in order to induce the current to move. The earlier telegraph lines were formed by a wire running from one terminus to the other, and then returning to the battery at the starting-point, thus making a complete metallic circuit. It was discovered, however, by some investigators, who were endeavoring to make the track of a railway serve instead of a wire, that the earth itself would act as a conductor for the return current, or, as perhaps it may be more properly conceived, that the earth being a vast reservoir of electricity, the current from the battery will willingly leave the battery by the positive pole, and traverse the conducting wire to a great distance, if it be allowed at last to enter the earth, and if, at the same time, the battery, by having its negative pole also connected

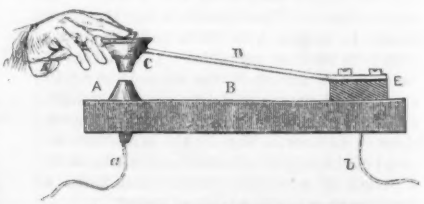


FIG. 14.—THE PRINCIPLE OF THE MORSE KEY.

The wire, *a*, is carried through the table, B, and connects with the little nipple or anvil, A. The table being a non-conductor, the current can not pass through it. When the button, C, at the end of the spring or lever, D, is pressed down so as to touch the anvil, the current instantly passes through, and from the metallic block, E, passes to the wire, *b*.

with the earth, be allowed to draw an equal amount from that natural reservoir, and thus in effect maintain the circuit. Since this discovery a single wire serves for a complete line, provided adequate connection with the moist soil of the earth be maintained at each extremity. In cities and towns where there are gas and water pipes, it is sufficient to carry the extremity of the wire to these pipes. In some offices it is twisted around the gas bracket in the wall of the room. In places where there are no such pipes a sheet of metal is fastened to the end of the wire, and buried in some damp cellar.

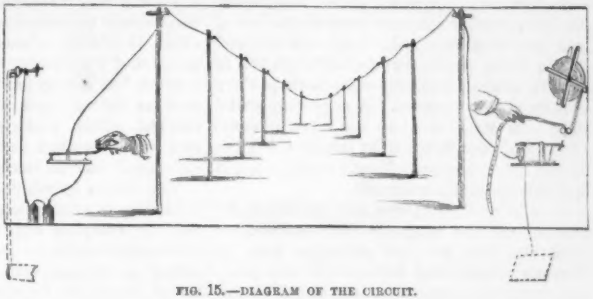


FIG. 15.—DIAGRAM OF THE CIRCUIT.

This is called making a "ground."

In Fig. 15 we have a diagram illustrating a circuit. In the office or terminus on the left are two jars upon the floor, which may represent the battery. From the positive pole the wire is carried beneath the table, there to connect with the anvil of the key. From the axis of the key the main wire or line wire runs, suspended in the air by being tied to glass insulators upon the poles. At the other terminus is an electro-magnet, placed upright, with an armature over it. The armature is fastened to one arm of a lever. The other arm is provided with a pencil or style, above which is a slip or ribbon of paper. The paper may be pulled by hand, as in the diagram, but for greater steadiness and convenience clock-work is employed. The armature hangs above the magnet, and is kept up by a delicate spring. To make a circuit, so as to enable the current to return to the battery, as the saying is, the wire is connected at each end with the earth.

This arrangement constitutes a circuit; but the current will not act in it while it is broken at the key, as represented in the diagram. The electricity is not powerful enough to leap from the anvil to the hammer under the lever of the key. In this position of the key the circuit is said to be open. The instant the hand of the operator presses down the key the circuit is closed, the whole line is excited by the electric force, the bar becomes an active magnet, and draws down the armature, which clicks, as up goes the pencil or style against the moving paper. If the operator at the key holds the key down a short time, a dash is made on the paper. If he releases it as soon as it is down, a dot is made.

Some one may ask, how is the answer sent back upon the same wire? To do this it is only necessary to have a key inserted in the wire at the right-hand office, and a register, or sounder, as the electro-magnet is called, in the other office.

The railroad traveler who looks out of the car window at some rural station often sees that the window of the telegraph office is the principal object of interest. A little group of loungers are gathered about the window-sill looking in. If he should enter the room, he might see the operator at the key, holding a dispatch in her hand, and with the key making the strokes which are necessary for its transmission. The line wire connecting with the key passes up the window-frame, and through the wall, to the telegraph poles beyond. Next to the key, upon the broad shelf which serves as a table, is the switch, or cut-off, that enables the operator at pleasure to connect or disconnect the wires that are concealed beneath the table. The largest instrument in the centre is the register, and a heavy weight hung from it drives the rollers which draw the slip of paper from the reel above to be marked by the styles. Beyond the register may be seen the sounder, or relay, connected beneath the table with a ground wire running through the floor, and with the two wires of the local battery. Upon the wall near the operator are the hooks on which the written message papers are filed after the messages have been sent.

If we imagine the message to be carried by a current flowing from the battery at one end to the magnet at the other end of the line, it might seem that a battery at the other end also would be essential to enable a reply to be sent back. But, as has been explained, we are to conceive of the current rather as an excitement of force taking place throughout the whole line if at all, ceasing every where if the line is broken at any point whatever. Bearing this in mind, it will be seen that half a dozen magnets might be inserted at as many different places, and the key might be put in any where, and signals made upon it would be responded to by all the magnets at the same time.

In fact, to conceive an actual telegraphic circuit, the reader may suppose that a line of wire thirty or forty miles long runs through half a dozen towns, passing through ten or twelve offices. In every office there is a key and an electro-magnet. A very simple and ingenious attachment to the keys prevents the key of each office from interrupting the circuit for the other offices, except when it is in use for making signals.

In every office means are provided for cutting off the magnets from connection with the line, so that messages may go through unobserved, but in ordinary practice messages sent from one point to another on the same circuit are heard at intermediate points. A visitor was recently in the office at Hallowell, Maine, and while conversing with the operator, who was at leisure, the sounds of the instrument went on in this way as usual. Soon the operator began to laugh. "What are you laughing at?" inquired the visitor, who saw no occasion for laughter in their conversation. "Oh!" replied the operator, "Bath is saying such droll things to Augusta."

Sometimes all the operators on a large circuit assemble at their posts and hold a conference, in which whoever speaks is heard simultaneously in all the offices. The press reports are usually delivered in this way. All the principal offices in the State of New York are thus supplied with the reports by one writing.

From various causes, some of which will be hereafter mentioned, the force of the current diminishes as the line is extended and the number of instruments is increased; and hence a current which would be powerful enough to traverse a short private line on which there were no intermediate stations, and to move the register at the terminus, may not be powerful enough to serve a circuit upon long lines employed in the service of the public. To increase the force of the current sufficiently is expensive, and practically inconvenient. Resort is had to an ingenious device called the repeater. The name "relay," which was used for the device first adopted for this purpose, suggests an illustration which will enable the reader to form an idea of it. The Persian and Assyrian monarchs, and some European kings of the Middle Ages, had a system of posts for couriers, which were stationed usually at a day's journey from each other. At each post were a courier and horses at all hours ready to start. The courier bearing a dispatch rode all day, and at night he reached a post, where fresh horses were saddled ready for the next stage of the journey, but he himself was exhausted. His force was nearly spent, but he could awaken the courier who was stationed there and deliver the dispatches to him, and he, with fresh strength, instantly took up the journey. In the same way the reader may conceive of the electric current arriving at a station or office so nearly exhausted that it can not go farther with power to deliver intelligible signals, but it still has strength to wake up another battery and set in motion a fresh current, which shall, so to speak, receive and carry forward the message which the exhausted current has just strength to utter.

The means by which this is effected vary with the circumstances, in some cases involving complex apparatus, which seems incomprehensible to any one but a professional electrician, but the main principle which lies at the foundation may be seen in this diagram. The current arrives on the line, say from the west (W), nearly exhausted

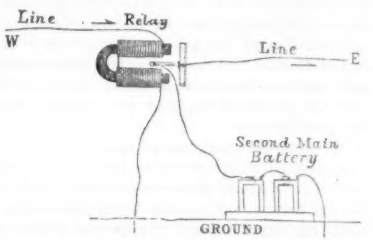


FIG. 16.—PRINCIPLE OF THE REPEATER.

by the resistance or by defects of insulation, etc. It has gone as far as it can carry the power of producing convenient signals. At this point, therefore, the line is cut, and a magnet inserted and connection made with the ground. The magnet is so adjusted that when it draws the armature the latter will touch a metallic point that is fixed between the bobbins. It is then only necessary to connect the further part of the line wire with the armature, and a fresh battery with the metallic point, and whenever the current arriving draws the armature, whether for a dot or a dash, a fresh current of precisely the same length will pass from this battery to the armature, and thence down the line, thus continuing the passage of the message without the intervention of the operator. If there is sufficient power to deflect a magnetic needle in a perceptible degree, this can be made to open and close a circuit by which a fresh powerful current will be set in motion.

It is found that it requires greater force to operate the register by which the message may be recorded on the slip of paper than merely to move the armature and produce a sound which the operator may understand. Hence the same device is used constantly to move the register or sounder.

These, then, are the principal elements of the telegraphic system: an extended insulated wire connected with the earth at both ends, and communicating with a battery which agitates it throughout with electrical

excitement; a key by which the continuity on which this excitement depends can be rapidly broken and renewed at pleasure; and a magnet whose armature, by moving under the influence of the alternations of excitement and quiescence, will instantaneously indicate to the observer every opening or closing of the circuit by the key.

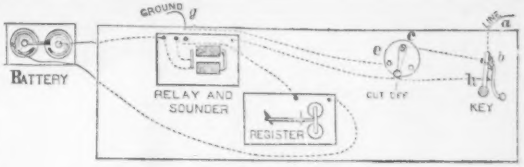


FIG. 17.—DIAGRAM OF THE TABLE OF A TERMINAL STATION.

The main line arrives on the right and enters through the wall at *a*, and reaches the key through its screw from beneath the table at *b*. From the same point a wire is carried beneath the table to the cut-off or switch at *c*. By moving the arm of the cut-off, *d*, so as to bring it in contact with the head of the screw on its left, at *e*, connection is made with the continuation of this wire, *g*, to the ground. To make this connection is called putting on a ground. If the current can go this way, it will not undertake to pass through the instruments. In the position of the cut-off indicated in the diagram the connection is broken, and the current is compelled to pass from the key at *h* to and through the relay before it can reach the ground. The motions of the armature of the relay bring the current of the local battery to operate on the register, if desired, so as to record the message.

When we attempt to extend our conception to a congeries of circuits, ramifying in every direction like the fibres of the nervous system in the human body, and constituting a net-work which embraces within its reach every important point in nearly three millions of square miles, we may form some idea of the vastness and complexity of this delicate, sensitive, and all-pervading organization.

The immense net-work of wires which is embroidered over the surface of the United States contains about seven thousand offices (including branch offices in cities), and probably about an equal number of relays.

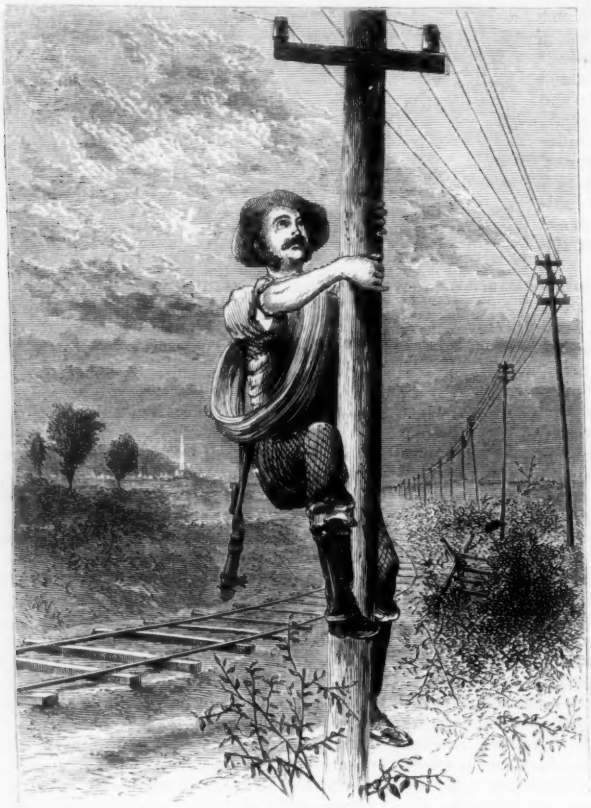
The first time a visitor enters the operators' room in a great central office the scene is a labyrinth of perplexity and confusion to him. A hundred keys and sounders are clicking all at once, making a noise like a diminutive cotton-mill. The floor is filled with ranges of tables, at which the operators are seated, separated from each other by glass screens. Against one wall is the switch-board, the most conspicuous object in the room. Without any actual resemblance, it recalls to the imagination of many visitors the thought of a great organ, its ranges of slender wires behind the screen suggesting the trackers and pipes, and the innumerable switches representing the keys and stops. Boys are passing to and fro with papers, and messages are sending and receiving from almost every table in the room. But though this may be to the visitor a scene of intricate entanglement, to the mind of the manager, who stands at his side, every instrument and every wire in this maze is clear in itself and in its connections. The expressive description given by a railroad superintendent of his own business is not inappropriate. "When we first take a man on," said he, "every thing is confusion to him, except the one thing he has to do as fireman or brakeman. But when he has served a good time every thing comes out clear to him, and he sees it all different. In fact, *his mind is all made over;* so that, in all the dépôt grounds, with the scores of switches and sidings and signals, and cars and engines moving, his eye sees every thing in its connection, and takes in the whole situation at a glance."

The switch-board, to which allusion has been made, is the central ganglion of the whole system. Every current passes through this apparatus. The manager, standing here, can, by inserting a brass wedge in the course of any current, hear what message is passing. He has thus the means of inspecting and listening to all that is going on over all the wires connected with the office.

To form an adequate conception of the intimacy and delicacy of the apparatus upon which this system depends would require a great degree of technical knowledge. In fact, the recent progress both in scientific investigation and in the art of manipulation has opened almost a new world of facts and principles, which are of engrossing interest to those who have the special training to master them, and which to the rest of us eclipse in marvelousness and mystery the fables of fairy-land and the dreams of magicians. To one to whom measuring the quarter of a second with a stop-watch has seemed to be the height of accuracy, the idea of dividing a second into a million parts, and measuring the duration of electric sparks, and finding that they vary from four-millionths to eighty-six-millionths of a second, appears not merely incredible, but inconceivable. Yet this is done.

Some of the curiosities of the telegraph will, however, be intelligible and interesting. Every substance has a certain specific resistance to the passage of electricity, peculiar to itself, just as some substances are good conductors of light, as glass; others poor, as painted or ground glass; others still are opaque or non-conductors, as wood.

A good conductor of electricity is a substance that presents a low degree of resistance to the passage of the current; a good insulator is one that presents a high degree of resistance. At one time many electricians were engaged in endeavors to devise some arrangement by which lightning might be



THE REPAIRER.

prevented from taking possession of the wires, or safely diverted from them when it had done so. Ingenious inventors had produced a variety of elaborate devices for this purpose, when some practical operator hit upon the expedient of winding the main wire once around the gas-pipe over his table before its connection with the instrument. He interposed a slip of paper between the wire and the pipe to keep them from touching each other. The paper presented a sufficient degree of resistance to prevent the escape of the small current used in telegraphing; but if the lightning took to the wires, the current, being very powerful, overcame the resistance of the paper, passed through, and escaped by the gas-pipes, leaving the instruments unharmed. This practical expedient, which in this country has substantially superseded other inventions, is a curious illustration of the simplicity of the most valuable inventions.

The whole system of the telegraph depends on this principle of resistance, and the different degrees which different bodies present. It is, perhaps, not too much to say that nearly all that can be learned about electricity depends on the definiteness of the laws of resistance and the accuracy of the means of measuring it; and if all substances were alike in respect to their resistance (if this be conceivable), we should probably know nothing about electricity.

Metals present less resistance than other substances, and it is fortunate that it is so. If glass were the only good conductor, the construction of a telegraph line would be a delicate undertaking. Different metals differ in their conductivity. Silver offers the least resistance, copper is almost equal to it, and it is six times better as a conductor than iron. The wonderful difference between substances in this respect will be seen when it is said that iron presents six times the resistance presented by copper, and that pure water presents 6754 million times as much resistance as copper; and yet water presents far less than some other substances. Telegraph wires can not be carried through water without carefully insulating them with an impervious covering, while the dry air of the atmosphere presents such enormous resistance that the wires can be strung along through it without any protection from it.

The resistance of a solid conductor, such as a wire, is in direct proportion to its length, if it be of the same size throughout, and is in inverse proportion to its size. Four wires an eighth of an inch thick are equal in size to one wire a quarter of an inch thick. Hence four miles of the latter will present no more resistance than one mile of the former. Upon the same principle a very small copper wire is as good a conductor as a large iron one. If one examines the instruments in a telegraph office he will see that the copper wire used in the connections of the apparatus is very small in comparison with the iron wire used for the main line.

The electric current, in passing through a circuit, expends or loses a part of its force in overcoming this resistance. The purer the metal, and the more perfect the joints are, the less is the resistance; but it is always something; and the more the line is extended the greater is the aggregate resistance, and hence the more force lost, until, if the line be too long, and without repeaters, not enough reaches the terminus to make intelligible signals.

Allusion has already been made to the power of an electric current to deflect a magnetic needle placed near it. This, of course, enables the electrician to detect the existence of a current.

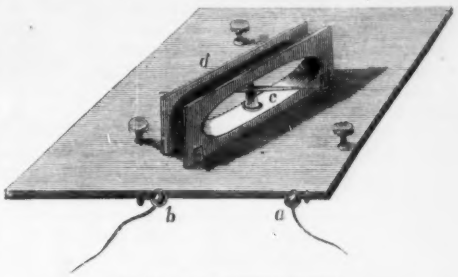


FIG. 19.—GALVANOMETER NEEDLE.

a and *b*, Wires from the battery connecting with the two ends of the coil, *d*; *c*, the needle. The three screws serve to adjust the tablet to a level.

When we ask in what direction the needle will turn, one is amused at the answer. It depends on the direction of the current; and the relation of the two motions is commonly described by a grotesque illustration. If we imagine, say the electricians, that an observer—an imaginary miniature man—is placed in the conducting wire in such a position that the current entering by his feet issues by his head (in other words, that he should swim *with* the current), and then the needle is brought near the wire in front of him—that is, so that his face is toward the needle—it will be found that the north pole of the needle will always turn toward the left hand of the imaginary man.

This singular property of the current affords the electrician the means of ascertaining not only the existence of a current, but also its direction, or its negative or positive quality. And since the degree of the deflection is proportioned to the intensity of the current, the magnetic needle affords a very delicate and sensitive instrument for reading the electric condition of a wire.

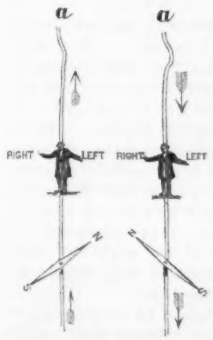


FIG. 18.—DIRECTION OF THE DEFLECTION.

If the wire, instead of being passed in a single strand near the needle, is wound in a coil, and the needle hung within it, the effect is multiplied.

In one form of galvanometer the needle is weighted at one end and hung perpendicularly in the coil. When the current flows around it, it tips to the right or left as the case may be. In diagrams used in books on electricity a ring with a needle hanging perpendicularly within it is used to signify that the diagram represents a circuit with no current in action, while a ring with the needle hanging aslant indicates that the current is in action, and the degree of the inclination of the needle indicates the relative force of the current.

A very curious property of the current must be adverted to here, which is, that if two paths are open to it the current will split or divide into two portions, each taking one of the paths; and if the paths differ in the degree of resistance they offer, the division will be accordingly, and the larger part of the current will take the easier path. This proportion is exact. For instance, if a wire after running a certain distance should be split into two unequal strands, one of which was twice the size of the other, the current would divide in the same proportion precisely, because the resistance of the small strand would be double that of the other. If, however, the smaller strand were cut off to be half the length of the larger, then the division of the current would change, and one-half would take each strand, because by reducing the length of the smaller strand to one-half, its resistance would be reduced to the same amount as that of the larger but longer strand.

This property of the current, together with that to which allusion has been made, of its power to deflect a magnetic needle to a greater or less degree, enables the electrician to ascertain whether a current is flowing in a wire, and if so, in which direction, and also how great its force, and the length of the wire in which it is flowing. To determine the latter, all he has to do is to connect with the wire a coil of a given length, and see how much of the current is diverted by it. Suppose the electrician, for instance, is brought to the wire as it hangs between the poles in the fields between two stations, and is asked if the line is in operation, and which way the message is passing, and how far it is going. It will easily be

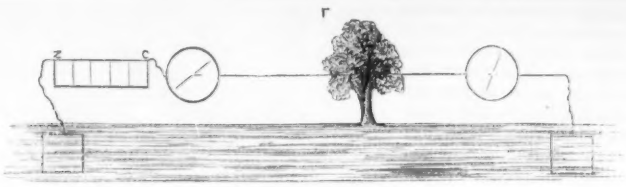


FIG. 20.—PARTIAL EARTH.

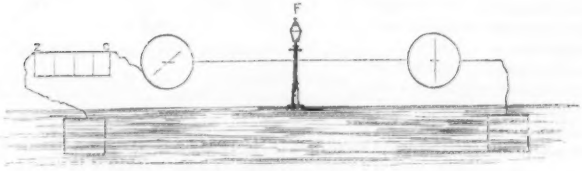


FIG. 21.—DEAD EARTH.

imagined that by cutting the wire and making it pass through the apparatus which contains his magnetic needle and his resistance coils he can tell, by the direction of the deflection of the needle, the course of the current, and by the degree of its deflection the force of it, and by the proportion in which it divides when he invites part of it to pass through his coils—or rather by the length of wire in the coils which he must add in order to divide it equally—how many miles of line wire it has to traverse.

Perhaps a rude illustration will assist some of our readers here. If a house were supplied with water by a long tube and a force-pump at a distance, we shall readily see that the force required to be applied to the pump handle to drive the column of water through the pipe the given distance would be a fixed, definite quantity. Suppose some morning, on applying our hand at the pump, we found that much less force was required, we should infer at once that something had happened to the pipe; probably a break had occurred, by which the water escaped nearer, and therefore more easily. If we had a coil of hose of the same size as the pipe, and which therefore we may suppose would offer the same resistance, and found that the force required to work the pump when connected with the aqueduct was just the same as that required to force water through thirty feet of hose, we might conjecture that the pipe had broken under-ground about thirty feet from the pump, and might begin to dig accordingly.

The measurements made with the apparatus of the electrician are so delicate and exact that an operator, interrupted by a fault in the line, can, without leaving the office, detect within half a mile the place of a leak or defect of insulation a hundred miles away, and at ordinary distances can determine it within a few hundred feet. If a defect occurs any where within the city of New York, for instance, the electrician in the central office can ascertain its location within half a block.

Many curious stories are told by electricians of the incidents that occur in testing for faults. In one case a California miner seeing a broken wire on the line near where he was at work, and knowing nothing of the nature of a conductor, benevolently mended the gap with a piece of blasting fuse of about the same size and color as the wire. Of course this interposed a complete resistance to the current. Repairers were sent out, who reported the line intact at the place indicated; and only a careful examination from pole to pole along the line detected the cause of the difficulty.

In another case an earth current made its appearance on the line between Boston and Salem every night. The electricians dispatched the repairers, who reported that every inch of the line was in good order, and so it proved during the daytime. But at night there was always trouble. Some of the operators began to suspect the intervention of spirits. It was at last found that where the line passed by a switch at a railway station the tall iron switch-rod was pushed against it every night at seven o'clock by the switchman who moved the switch for the evening train.

If a large leak should be made in a gas-main under the street, midway between the company's reservoir and the house where the gas was to be consumed, the effects of this unseen leak would be perceived at each end of the pipe, but in different ways. At the gas-works it would be found that the pipe took an unusually strong current; the resistance to the flow of gas in the pipe would be diminished—in other words, the leak would facilitate the escape of the gas—and

hence the degree of pressure which was previously necessary to force the gas through the pipe in a sufficient quantity for the consumer would now drive a much larger quantity. At the other end of the pipe, however, the consumer would find his supply diminished, and if the leak were considerable he might no longer receive enough to give a flame.

These homely illustrations may suggest to the reader the basis of a rude conception of the means by which electricians test for faults. But in the case of electricity the subject dealt with is so delicate in its nature, and the conditions under which it is treated are prepared with such minute exactness and precision, that the computations of distance are expressed in algebraic formulas, and the results attained are often marvelous in their accuracy.

Watching an electrician measuring the resistance of a wire or the force of a current, one might imagine him a chemist weighing some invisible atoms in the most delicate of balances. Before him under a glass case is the slender needle of the galvanometer, and concealed around its base are the two wires through which the divided current is to flow, its parts taking opposite directions around the needle, so that if the current is precisely equally divided between the two wires, the influence of one upon the needle will exactly counteract that of the other, while the slightest excess of one over the other will be instantly shown by a deviation of the needle to the one side or the other, according to the position of the stronger current.

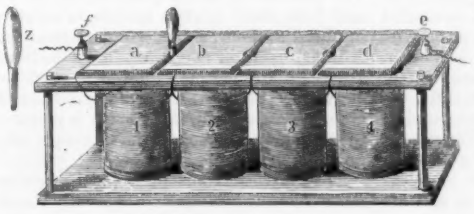


FIG. 22.—RESISTANCE COILS.

The resistance coils (which correspond to the hose in our illustration of the pump) are like the weights of the apothecary. They are arranged under a series of short metallic blocks (*a*, *b*, *c*, *d*, in Fig. 22). If metallic pegs, which are provided for the purpose, are inserted in the holes between these blocks, the current passes directly from *e* to *f* through the connection formed by the blocks and pegs, which constitute so complete a conductor that the resistance is practically nothing. If the peg between two of the blocks be pulled out, the current can not leap the distance between them, and is obliged to pass from the first block through the coil below it to reach the second block. In measuring a resistance, plug after plug is pulled out until the needle is found to rest at zero. The resistances of the various coils that have been brought into the circuit by pulling out plugs are then added together, and they show the total resistance of the line which has been thus balanced against them. It may truly be said, then, that this intangible, invisible, inaudible force is weighed in the scales, and, marvelous as it may seem, it is measured with far greater exactitude than are those tangible and visible substances which men have so long and so familiarly dealt with.

The extreme minuteness of accuracy to which these measurements are carried is seen in the construction of an instrument called the rheostat, which is often used with the resistance coils. An ordinary resistance coil is of unchangeable length. The rheostat is a changeable or adjustable coil. Imagine two spools, side by side—one full, the other empty—with the end of the thread from the full spool attached to the empty one. It is plain that every turn we should give to the empty spool would wind upon it part of the thread, and reduce by so much the number of turns on the full spool. In the rheostat, wire takes the place of the thread, and on the full spool, which is of wood, it lies in a groove, like that on a screw, which isolates each turn from those next it, so that the current can only pass by following the wire from end to end. But the empty spool is a metallic cylinder, and whatever wire is wound upon it becomes, as a conductor, merged in it, so to speak, by the contact, as the current on reaching this cylinder is free at once to pass to the end of the wire, "across lots," with no perceptible resistance. Practically, therefore, the resistance of all the wire that is wound off upon the second spool is nullified. The length of the wire remaining is indicated on a scale with great precision, even to a fraction of a turn of the cylinder.

The amount of resistance is expressed in "ohms," as they are called. An ohm is the unit of measurement of resistance, just as a foot is a measure of length. All telegraph wire is tested for its resistance, as well as for its strength, before it is put up; and all the lines and magnet coils and batteries in use are constantly tested to detect defects.

The more words that can be transmitted in a given time over a line of telegraph, the greater its value, provided the expense of transmission is not disproportionately increased. We have described the sounder which is commonly used in this country. Its use is practically limited by the number

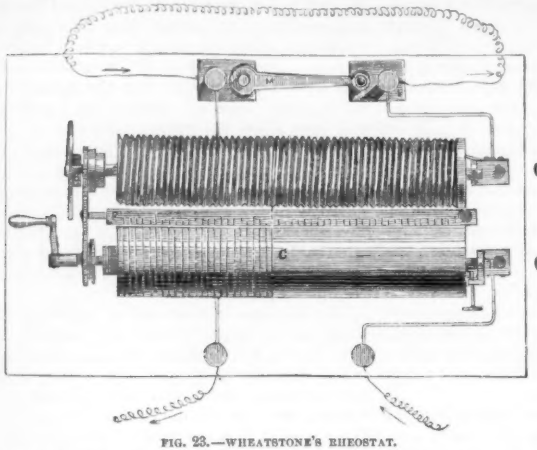


FIG. 23.—WHEATSTONE'S RHEOSTAT.

G, Wooden cylinder, with grooved surface; C, metallic cylinder; F, scale for reading length of wire on the non-conducting cylinder.

of words a man can write in an hour. A good copyist will not usually write over 800 or 1000 words an hour, but a good operator can receive and write 1500 to 1800 words per hour, and on special occasions 2500 to 2600 have been received. Operators on the continent of Europe do not transmit more than half as many in the same time. The number of words transmitted is increased by the use of the printing instrument to between 2500 and 3000 an hour, which are printed in Roman characters as received, and are ready for delivery, therefore, without the delay of writing out. The operator, by the same movement, can print the message at his own desk and at that of the receiver, and at once detect any error. These instruments are very complicated, easily disarranged, require very skillful operators, a second man or some mechanical power to run them, and a well-insulated line, as the movements at each end must keep perfect time. They are much more expensive than the key and sounder, and are only used on circuits where there is a large and steady business. Their construction is too complicated for description. Printers, as they are called, have never been extensively used in Great Britain, although in use on the main lines of the continent of Europe, where, however, they are not worked as rapidly as with us.

In the "automatic telegraph" a little machine is substituted for the operator, and the message is prepared for it on a strip of perforated paper.

Many different plans have been devised for automatic telegraphing, but only two have thus far proved successful—the Wheatstone, or English system, and the automatic, or American system. The former is extensively used in Great Britain, and a line has been recently constructed between New York and Washington for the working of the latter.

The instruments employed by these two systems are entirely different. In each, holes representing the words of the message are first punched in a narrow strip of paper, which are the equivalents of the dot and dash of the Morse alphabet, and are translated into dots and dashes after transmission. The English puncher has three keys; the first punches two vertical holes, : , representing the dot; the third two holes vertical, but not opposite, ·. , representing the dash; the centre key simply moves the paper along. The American puncher has a key for each letter, which punches holes representing the dots and dashes of the letter. It is more complicated than the other, but requires less than one-third as many movements of the keys to each letter. The dot is represented by a small hole above the line, · ; the dash by two small holes above and one large one below, ·:· . It is less liable to mistakes, as the operator is not obliged to translate each letter into dots and dashes before punching. The number of words punched by each is said to be about thirty a minute, or eighteen hundred an hour, the maximum amount an ordinary operator can transmit by the Morse key. No strength is required to work the Morse key, but the punchers require considerable. After the punched slip is prepared the machine transmits the message with great rapidity.

The American transmitting and recording instrument, it is claimed, has greatly the advantage over the English both for its simplicity and rapidity of execution. The English instrument, which is too complicated for description here, can transmit from sixty to 120 words a minute, the number diminishing with the distance. Usually about eighty a minute are sent. It is said that from 1000 to 1500 words a minute can be transmitted by the American instrument between Washington and New York; but if only 500 can be sent, and of this, it is claimed, there can be no reasonable doubt, it may prove a very great improvement over other systems for some purposes.

In the American system, after the paper is punched it goes to the transmitter, is received between pressure rollers, and carried

by the friction on to a small platform of some non-conducting material. A solid cylinder of copper connected with the line wire is inserted in the centre of the platform. Over this cylinder, and resting upon it, is a needle which has two small wheels at one end, and is connected at the other with the wire leading to the battery. The paper passes between the cylinder and needle, and is carried off by another set of pressure rollers. The circuit is broken by the paper, and closed when the holes in the paper pass under the wheels and the wheels come in contact with the copper cylinder. Where there is a cluster of three holes both wheels form a contact and a dash is transmitted, in other cases a dot.

Appareil autographique de Mr l'abbé Caselli
Paris 1er Avril 1862

FIG. 25.—AUTOGRAPH TRANSMITTED BY CASELLI'S APPARATUS.

The same instrument answers for a receiver. The message is recorded on chemically prepared paper, rendered sensitive to the slightest current. Occasional errors arise,

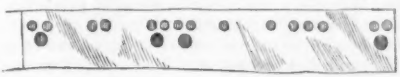


FIG. 24.—MESSAGE PREPARED FOR AUTOMATIC TELEGRAPH.

caused by the dot running into the dash and the dash into a straight line, and can not be detected until the message is translated, so great is the rapidity of transmission; and when they do occur the whole message must be repeated.

Punching instruments can be readily constructed and furnished to those who have frequent occasion to use the telegraph, and a clerk can easily punch the telegraphic letters, and thus greatly lessen the expense of sending a long message. On the other hand, it is to be considered that the aggregate of time employed is a considerable offset. In England the automatic system is regarded as indispensable for press messages, for which purpose messages are punched in triplicate, and the same ribbon is used again and again in distributing the message by different instruments in all directions. It is said to be doubtful, however, to what extent great rapidity can be maintained on lines which have more than one wire, for whenever a current is flowing over one wire it induces another current in the other wire at each opening and breaking of the circuit; hence if messages are passing on both wires there is a liability of both being received on each line, and rendered unintelligible. This instrument is not as complicated as the printer, but requires more operators, and is therefore more expensive.

Another very curious and complicated transmitter, used in France, is an autographic instrument by which the *fac-simile* of the handwriting can be produced at any other office where a similar instrument is used. It is especially useful for messages relating to transfers of money, as it affords the receiver an opportunity to test the authenticity of the dispatch by the *fac-simile* of the sender's signature. It is said that on an average nearly thirty messages an hour can be transmitted by it. The message is written on chemically prepared paper, and the price varies with the size of the paper.

This instrument can transmit stenographic writing, and then its rapidity is said to be truly prodigious. Portraits and drawings can also be transmitted by it.

This seems almost incredible. But the reader who has followed the explanations before given can form a general idea of the process by imagining that two great pendulums are made to swing simultaneously, one at either end of the line. Each moves a metallic point back and forth over the surface of chemically prepared paper, and after every movement the position of the pencil is changed a hair's-breadth down the page. If, then, at the instant that the metallic point at one terminus is in contact with a line of the manuscript or copy, a telegraphic current is transmitted to the point at the other terminus, and passes thence through the paper, it will produce a discoloration, which will be a dot or a line according to the duration of the current. If the autograph be closely inspected, it will be seen that it is made up of very fine parallel lines. The same thing will be more clearly seen in the butterfly, shown on a previous page.

The most recent marvel of the telegraph is what is called the duplex telegraph. This invention is a simple and beautiful device by which one wire serves to carry two messages in contrary directions at the same instant without interference. At first thought this may seem an impossibility; but when we consider how sounds, which we know to be vibrations in the air, may be propagated together in almost any number, and pass and cross each other in opposite directions without losing their individuality, we see how it is possible, even if we conceive of two currents as flowing in contrary directions, that currents of electricity, or rather, we should say, the vibratory action and reaction which we term currents, should coexist and interlace without interference. In the ordinary

arrangement of a telegraphic circuit, if the operator at New York should commence to send a message to Philadelphia at the same time that the Philadelphia operator was sending to New York by the same wire, confusion would result. On the theory of two currents even, perhaps this confusion would not, under proper conditions, be an interference of the currents in the wire; but if they remained distinct, there would be confusion in the double and broken utterance of the receiving instruments. The distinct currents would both pull upon the armature of the sounder, and the result would be a confusion in the signals. The instruments at each end would utter an unintelligible jargon. To obviate this difficulty some device is necessary which shall cause the current from the battery at either end to flow through the magnet at the same end without affecting it, but yet have its effect on the magnet at the other end. After the current from the transmitting office passes through the key by which the signals are made, the wire is divided into two, one of them leading to the magnet and thence to the main line, while the other leads also to the magnet and thence back to the negative pole of the battery. To prevent too much of the current from following the latter course, which, being very short, presents but little resistance, resistance coils such as have been described are inserted in this short line, and when, by means of these, the resistance is made equal to that of the main line, the current divides equally, one-half passing forward to the main line to carry the message to the other terminus, the other half returning to the battery through the equally difficult path of the resistance coils. The magnet in question has both these wires wound around it in opposite directions, the consequence of which is that the half of the current which is returning to the battery counteracts the influence on the magnet which would otherwise be exerted by the other portion which is going forward on the line, and the outgoing message therefore produces no effect on the magnet. When the part of the current which carries the message, so to speak, arrives at the similar arrangement at the other end of the line, it passes around the magnet there without any such counteracting influence, and therefore makes its signals freely. In other words, the duplex telegraph is a contrivance for dividing the current, and using one-half of it to send the message, and the other half to keep the sounder from being disturbed by the message, thus leaving the sounder free to utter another message which is coming at the same time from the other end of the route.

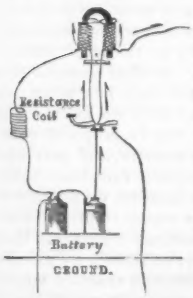


FIG. 26.—PRINCIPLE OF THE DOUBLE TRANSMITTER.

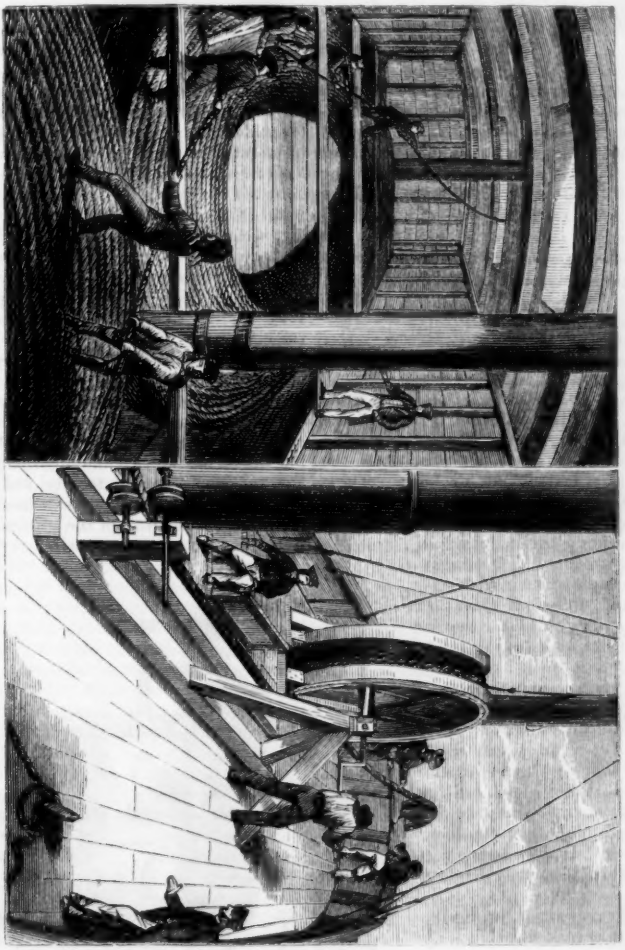
The American lines are connected with those of the Old World by cables. The cable is an insulated copper wire, surrounded by iron wire, covered with hemp and a thick coating of cement, as it was feared that the crustacea inhabiting the ocean depths might eat through this coating. These creatures were carefully analyzed, and a compound made so hard that they could not act upon it.

The story of the laying of the cable has been often told, and need not be repeated here. The peculiar conditions of submarine telegraphy required the use of batteries of very small power. The current was then found to be so inconstant in its movement that the needle could not be relied upon to open and close a local circuit, while its tremulous movements were so slight that they could not be followed by the eye. We have said that the time required by a current of electricity for its passage through a conductor is directly proportional to its length, other things being equal; but in the case of cables other causes of retardation are added. The current flowing through the cable induces a temporary current in the reverse direction on the outside of the conductor, and the attraction between the two retards the current, and this retardation increases in a geometric ratio with the length of the cable. The cable becomes, in effect, an enormous Leyden jar, the wire constituting the interior, the water the exterior coating, with the gutta-percha insulator between. When the circuit is closed the jar is charged, and discharged when it is opened. This also causes delay. The current moves as a wave which gradually travels along the wire, appearing in different parts at successive intervals of time; and by adjusted touches of the key successive waves may follow each other through the wire before the first has died away. If the battery be too large, the cable will be destroyed; if too weak, the signal is too fleeting to be seen without prolonging the wave to such an extent as to prevent rapid transmission. To remedy these difficulties a very delicate and beautiful form of the galvanometer was invented. It consists of a mirror of microscopic glass about one-eighth of an inch in diameter, suspended by a silk thread in the centre of a coil of very fine wire. A magnet is attached to the back of the mirror made of thin watch-spring. The whole weighs less than a grain. The magnet is so sensitive that if the ends of the wire connecting the coil are held by the hands, one end being covered with tin-foil, there will be sufficient magnetism excited to deflect the needle. If a current equal in strength

to that produced by a knife blade when brought near a magnetic needle is received, it will move the magnet. A shaded light is thrown on the mirror, which is reflected upon an ivory scale, and is brought to a sharp focus by the lens. The instant the circuit is closed the magnet and mirror are deflected, and the light moves to the right or left on the scale, as the current is positive or negative. A very minute displacement of the magnet gives a very large movement of the ray of light. A movement on one side of the zero point represents the dot, on the other the dash, of the Morse alphabet, and the interval between the two the space. Before the first element has been received a second and even a third are following in its wake. Thus the thoughts of the East are read in the West by the flickering of a reflected ray of light.

Very recently a registering instrument has been invented as a substitute for the galvanometer. It consists of a small glass tube, which waves to and fro over a running strip of paper without touching it. The ink is spurted upon the paper by a series of electric sparks in a fine shower, which makes a continuous line upon the paper, giving a faithful record of the motion of the current. This instrument nearly quadruples the speed with which messages can be transmitted over the cable, it being capable of recording 120 words a minute, while the mirror galvanometer receives about thirty.

There is, perhaps, no more wonderful example of organization, subordination, and



LAYING A SHORE END OF ATLANTIC CABLE.

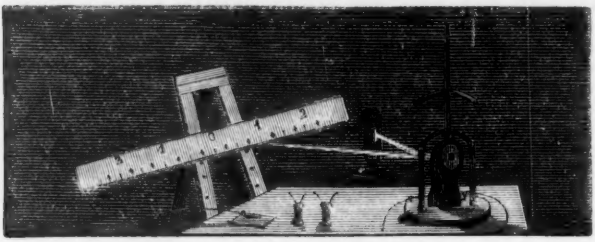


FIG. 27.—THE MIRROR GALVANOMETER.

intense attention and celerity to be found in any department of human affairs than is afforded by the telegraphic service between London and New York. A message sent from New York has to be rewritten four times in its route—that is to say, four times

FIG. 28.—A REGISTERED CABLE MESSAGE.

it has to leave the wires and pass in at the eye or ear of an operator, through his mind and by his hand on to paper, or on to the transmitting instrument, or both. These faithful servants of the public, sitting continuously at their posts hundreds and thousands of miles apart, maintain an incessant stream of such communications with such perfect discipline and unbroken attention that the average time for the entire operation, including all kinds of messages, however long, is less than fourteen minutes for each message from New York to London. This, too, is but one short line in a net-work of over seven hundred thousand miles of wire which covers the globe, uniting more than twenty thousand cities and villages in every continent and of every language in one vast organization incessantly in operation.

Almost every season brings forward some new application of the telegraph. A complete net-work of wires now connects the stock exchange with the brokers' offices and the leading hotels, and the business done at the board is printed off in more than a thousand places in New York simultaneously. There is no reason why it should not be employed in a similar way to communicate to the offices of lawyers the progress of proceedings and the call of the calendar in the courts of law. What is called the district telegraph has recently been established in New York. It is a house-to-house telegraph, with a central office in each of a number of convenient districts. Each subscriber pays two dollars and a half a month, for which the company put up a neat little instrument in any part of his house that he desires, by means of which he can at any hour of the day or night summon to his door within the space of three minutes a messenger, a policeman, or a fireman with a fire-extinguisher. For the service of either he is to pay fifteen cents a half hour for the time employed. This system is spreading very rapidly and successfully throughout the city.

Railroad companies are now very generally employing telegraph operators as train dispatchers, and the incessant use of the telegraph is becoming a necessity on every road. Private telegraphs are used by many business houses for communication between the warehouse and the factory, and by gentlemen in their country residences to summon the coachman from the stables and the

THE HOUSE PRINTING MACHINE.

porter from his lodge. There are said to be over four thousand miles of private telegraphs in Great Britain. How many there are in this country we are not informed. In hundreds of public buildings and churches miniature telegraphs are used for lighting

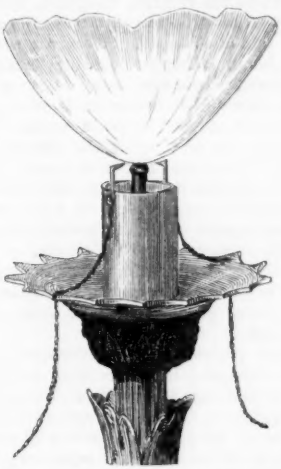


FIG. 29.—LIGHTING GAS BY THE ELECTRIC SPARK.

the gas, and it is estimated that the expense of the apparatus for a large church is repaid in two years by the saving in gas, as compared with the common and wasteful way of turning on the gas and then lighting one burner at a time with a rod and torch.

One of the most curious applications of the telegraph is its use in surgery to discover a bullet in a wound. The probe and forceps are each connected with a delicate battery. When one point of the probe or of the forceps touches the ball no effect is produced, but when both touch it the ball completes the circuit, and the tinkling of a bell

FIG. 30.—THE ELECTRIC PROBE AND FORCEPS.

or the vibration of a spring shows the surgeon that he has seized it.

The immense extension of the general telegraphic system, and its common use for business and social correspondence and the dissemination of public intelligence, are far more important to the community than any of these incidental applications of the system. The telegraph system is extending much more rapidly than the railroad system, and is probably exerting even a greater influence upon the mental development of the people than the railroad is exerting in respect to the material and physical prosperity of the country. It has penetrated almost every mind with a new sense of the vastness of distance and the value of time. It is commonly said that it has annihilated time and space—and this is true in a sense; but in a deeper sense it has magnified both, for it has been the means of expanding vastly the inadequate conceptions which we form of space and distance, and of giving a significance to the idea of time which it never before had to the human mind. It lifts every man who reads its messages above his own little circle, gives him in a vivid flash, as it were, a view of vast distances, and tends by an irresistible influence to make him a citizen of his country and a fellow of the race as well as a member of his local community.

In other respects its influence, though less obvious, will probably prove equally profound. So long as the mysterious force employed in the telegraph was only known in the mariner's compass, or by scientific investigations, or in a few special processes of art, the knowledge of the electric or magnetic force had, so to speak, a very limited soil to grow in. By means of the telegraph many thousands of persons in this country are constantly employed in dealing with it practically—generating it, insulating it, manipulating it. The invention of Morse has engaged some one in every considerable town and village in studying its properties, watching its operation, and using it profitably. Nothing could be better calculated to attract general attention to this newfound power, and to disseminate that knowledge of it from which new applications may be expected to result.

The tendency of scientific pursuits to promote the love of truth and the habit of accuracy is strikingly illustrated in the zeal and fidelity with which the minute and long-continued investigations have been pursued that have led to the development of this new realm of knowledge and this new element in human affairs.

But perhaps the most extended and important influence which the telegraph is destined to exert upon the human mind is that which it will ultimately work out through its influence upon language.

Language is the instrument of thought. It is not merely a means of expression. A word is a tool for thinking, before the thinker uses it as a signal for communicating his thought. There is no good reason why it should not be free to be improved, as other implements are. Language has hitherto been regarded merely in a historical point of view, and even now philol-

ogy is little more than a record of the differences in language which have separated mankind, and of the steps of development in it which each branch of the human family has pursued. And as a whole it may be said that the science of language in the hands of philologists is used to perpetuate the differences and irregularities of speech which prevail. The telegraph is silently introducing a new element, which, we may confidently predict, will one day present this subject in a different aspect. The invention of Morse has given beyond recall the pre-eminence to the Italian alphabet, and has secured the ultimate adoption throughout the world of that system or some improvement upon it. The community of intelligence, and the necessary convertibility of expression between different languages, which the press through the influence of the telegraph is establishing, have commenced a process of assimilation, the results of which are already striking to those who carefully examine the subject. An important event transpiring in any part of the civilized world is concisely expressed in a dispatch which is immediately reproduced in five or ten or more different languages. A comparison of such dispatches with each other will show that in them the peculiar and local idioms of each language are to a large extent discarded. The process sifts out, as it were, the characteristic peculiarities of each language, and it may be confidently said that nowhere in literature will be found a more remarkable parallelism of structure, and even of word forms, combined with equal purity and strength in each language, than in the telegraphic columns of the leading dailies of the capitals of Europe and America. A traveler in Europe, commencing the study of the language of the country where he may be, finds no reading which he can so easily master as the telegraphic news column. The telegraph is cosmopolitan, and is rapidly giving prominence to those modes of speech in which different languages resemble each other. When we add to this the fact that every step of advance made by science and the arts increases that which different languages have in common by reason of the tendency of men in these pursuits the world over to adopt a common nomenclature, and to think alike or in similar mental processes, we see the elements already at work which will ultimately relegate philology to its proper and useful place among the departments of history, and will free language from those restrictions which now forbid making any intentional improvements in it. With the general use of the telegraphic system other things begin to readjust themselves to its conditions. Short-hand writing is more cultivated now than ever before. The best reporter must understand both systems, and be able to take his notes of a conversation while it passes, and then by stepping into an office transmit it at once without writing out. There is now in practical use in the city of New York a little instrument the size of a sewing-machine, having a key-board like the printing telegraph, by which any one can write in print as legibly as this page, and almost as rapidly as a reporter in short-hand. When we consider the immense number of people that every day by writing a telegram and counting the words are taking a most efficient lesson in concise composition, we see in another way the influence of this invention on the strength of language. If the companies should ever adopt the system of computing all their charges by the number of letters instead of words, as indeed they do now for all cipher or unintelligible messages, the world would very quickly be considering the economic advantages of phonetic or other improved orthography.

These processes are in operation all the world over, and in reference to the use of one and the same alphabet. By the principle which Darwin describes as natural selection short words are gaining the advantage of long words, direct forms of expression are gaining the advantage over indirect, words of precise meaning the advantage of the ambiguous, and local idioms are every where at a disadvantage. The doctrine of the Survival of the Fittest thus tends to the constant improvement and points to the ultimate unification of language.

The idea of a common language of the world, therefore, however far in the future it may be, is no longer a dream of the poet nor a scheme of a conqueror. And it is significant of the spirit of the times that this idea, once so chimerical, should at the time we are writing find expression in the inaugural of our Chief Magistrate, in his declaration of the belief "that our Great Maker is preparing the world in His own good time to become one nation, speaking one language, and when armies and navies will be no longer required."

ON THE BRIDGE OF SIGHS.

By ELIZABETH STUART PHELPS.

It chanceth once to every soul
Whose mystic scrolls illuminate enroll

The hieroglyphics of a peace
Which was the ransom of a pain's release,

Upon life's Bridge of Sighs to stand,
"A palace and a prison on each hand."

O palace of the rose-heart's hue!
How like a flower the sweet light fell from you!

O prison with the hollow eyes!
Your steadfast look reflects no flower's surprise.

O palace of the rose-sweet sin!
O blessed prison that I entered in!

THE CHILDREN'S CHURCH.

[FROM THE GERMAN OF PAUL GEROK.]

THE bells of the churches are ringing—
Papa and mamma have both gone—
And three little children sit singing
Together this still Sunday morn.

While the bells toll away in the steeple,
Though too small to sit still in a pew,
These busy religious small people
Determine to have their church too.

So, as free as the birds, or the breezes
By which their fair ringlets are fanned,
Each rogue sings away as he pleases,
With book upside down in his hand.

Their hymn has no sense in its letter,
Their music no rhythm nor tune:
Our worship, perhaps, may be better—
But *theirs* reaches God quite as soon.

Their angels stand close to the Father;
His heaven is made bright by these flowers;
And the dear God above us would rather
Hear praise from their lips than from ours.

Sing on, little children—your voices
Fill the air with contentment and love:
All nature around you rejoices,
And the birds warble sweetly above.

Sing on—for the proudest orations,
The liturgies sacred and long,
The anthems and worship of nations,
Are poor to your innocent song.

Sing on—our devotion is colder,
Though wisely our prayers may be planned,
For often we, too, who are older,
Hold *our* book the wrong way in our hand.

Sing on—our harmonic inventions
We study with labor and pain;
Yet often our angry contentions
Take the harmony out of our strain.

Sing on—all our struggle and battle,
Our cry, when most deep and sincere—
What are they? A child's simple prattle,
A breath in the Infinite Ear.

MADAME DE SÉVIGNÉ AND HER CONTEMPORARIES.

MARQUISE DE SÉVIGNÉ, AT THE AGE OF TWENTY-FIVE.

THE granddaughter of a saint, the daughter of a hero cavalier, the pupil of a priest, and the wife of a reprobate, Madame De Sévigné possessed in her family surroundings more than sufficient to create a romantic interest, even if she were not herself one of the most striking characters of the seventeenth century, and had not, with her vivid and felicitous pen, contributed a knowledge of her contemporaries to history. Her beauty, her animal spirits, her clear perception, her brilliancy as a belle, and her sagacity as a woman carried her triumphantly through a dazzling, seductive, and picturesque period of French history, and enabled her, in depicting it for private reading, to use the same lights, so to speak, that illuminated the side scenes at the court, and the motives, rumors, and knowledge which moved but, to the outside world, did not disturb "society." It is impossible to contemplate Madame De Sévigné apart from these contemporaries or out of this society. She belongs to both, did much to make and give a character to both, and, to her great credit be it said, is one of the very few exceptional characters to be found in the history of either. While the morals and manners of the time may account for and palliate her peculiarities, even a brief acquaint-

ance with her ancestry will indicate the source of her strongest characteristics—eloquence, patience, purity, and spirit—as well as the possession of some weaknesses good training enabled her to control, and others which, escaping her, were nevertheless apparent in her offspring.

Jeanne-Françoise Rabutin de Chantal (*née* Frémyot), after ten years of struggling widowhood, severed the domestic ties which bound her to four helpless orphan children, to link herself with what she deemed a higher duty, left her home in 1610, and, under the influence of St. Francis de Sales, became the founder of the Order of the Visitation. In her day she built some eighty convents, and in after-times was canonized. It took a marvelous courage to thus rend the dearest ties of nature, and to step over the body of her young son, who, lying prostrate across the threshold of the old château of Bourbilly, with words and tears of supplication, passionately but vainly implored her to forego the design which was to leave him motherless as well as fatherless.

The boy thus doubly orphaned, young Celse-Bénigne Rabutin de Chantal, fourteen years old, was taken to the house of his maternal grandfather, president of the Dijon Parliament, where he grew up to manhood, and became distinguished for many graces of mind and person. Elegant yet blunt, impetuous yet playful, proud yet lively, intrepid, rash, and passionate, he was a model cavalier, who, in addition to the needful physical attributes, possessed a notable faculty of peculiar and attractive speech, which, it is said, made his conversation a pleasure, the charm of which lay as much in his grace of manner as in felicity of fancy; while, however, the fascination of his tongue made him an accomplished favorite, the impetuosity of his temper brought him into continual jeopardy. It was the nature of his blood to be at the fever-heat of gallantry, and the customs of the period were not calculated to assuage it. His father, a man of war, had set him an active example of a life of hazard, and left him a legacy of peril. Having proudly carried many wounds received under "the white plume of Navarre," which brushed away the claims of Cardinal de Bourbon and established Henry IV. on the throne, having escaped through many battles and fought eighteen duels, he met an untimely and accidental death. Excelling his father in the polite arts, the young Baron de Chantal almost rivaled him in cavalier gallantry. He had *his* duels and his friends' duels to attend to, and one of the latter suggestively illustrates his character, and receives additional interest from the circumstances which resulted from it.

In 1624 the young baron was married to Marie de Coulanges, daughter of a "Conseiller du Roy," etc., which elevated connection might reasonably tend to somewhat calm down the troublous currents of his vivacious intrepidity; but it was not so, for on the Easter-Sunday of that very year, and in the church where he had just partaken of the Holy Sacrament, he received a summons to second a friend in a combat about to take place at the Porte St. Antoine. Chantal hurried from the church to the dueling ground, from the solemnities in which he had been a participant to the delusive sophistries of the "code of honor." The scandal caused by this Easter-day conflict was intense, the result disastrous; prosecutions ensued, and Chantal was compelled to take shelter in temporary obscurity. When, deeming the storm abated, he ventured to appear at court, it was to feel that the chilling glance of Louis XIII. and the frowns of the cardinal, Richelieu, shut out all future hope of court sunshine on his path. The king and the cardinal could check the desires of the courtier, but they could not dampen the ardor of the cavalier. They might interfere with the fortune of the former, but could not deny the latter the glory of defending his country. In this defense Chantal was slain, in July, 1627, bravely fighting against the English, who had effected a landing on the Ile de Rhé. Thus died, after a brief career, full of talent, bravery, and promise, the son of Sainte Chantal, and the father of Madame De Sévigné, then an infant.

The little child orphaned by the carnage at the Ile de Rhé was not yet eighteen months old, having been born at the Place Royale-du-Marais on the 5th of February, 1626, during the days of her father's disfavor at court. Greatly needed, indeed, was the prayerful injunction of Sainte Chantal on this occasion to her weeping daughter-in-law, whose situation and sorrows could not fail to conjure up a sad similitude to her own early tribulations. "Be careful of yourself, my dearest daughter," she wrote. "Keep yourself to bring up in the fear of our Lord this offspring of a holy wedlock. Guard her as a trust, without allowing your affection to be too greatly attached, so that the Divine Goodness may take a greater care of and be all things to this dear little child." With what a singularly sympathetic idea of the state of affairs did not the pious Mother Chantal express herself, betraying a fear for the health of the young widow, and in this fear seeing the greater need of the Divine Goodness to be all things to the dear little child! Her anxieties were not overdrawn. In six years the dear little child had no mother. Her grandam Coulanges then supplied the place, but she, too, passed away in a twelvemonth. Grandpa Coulanges followed his daughter and wife in a few years, and then a family council of the Rabutins and Coulangeses was held to determine what should be done with the dear little one—who

would become guardian to the young orphan Marie de Rabutin-Chantal. The "Divine Goodness" guided the choice, which fell to the lot of her mother's brother, Christophe de Coulanges, Abbé of Livry, then but twenty-nine years old, but who proved himself eminently worthy of the trust.

Marie was now transplanted to the old priory of Livry, in the forest of Bondy. In this sweet solitude the sorrows and anxieties which had invaded her young life were dispelled. Peace and care set in motion the great faculties with which Providence had blessed her. Seeing what nature had done for his little niece, the good abbé brought all the influences of integrity, prudence, and solid learning to strengthen her heart and enrich her brain. From him she was schooled in what she calls "the holy virtue of economy," and to a true estimation of the worthlessness of ostentation and extravagance. His teaching and sedulous care developed that perfect good sense on which, as her latest biographer* truly says, reposes the genius of Madame De Sévigné. The strength of character thus formed saved her from temptations which fashion did not condemn, and from errors which beaux and belles deemed triumphs, at a later period, and in a state of society where she was a flattered inspiration. Destined by her birth and connections to move amidst the triumphs and dangers of the court and court circles, the abbé, with the most watchful solicitude, prepared her for the achievement of the one, and fortified her against the other. Hence her education was brilliant as well as solid, all the arts and fascinations of polite literature being woven round, and keeping, perhaps from unnecessary prominence, until needed the solid erudition and strict principles of integrity which lay at the foundation of all his precepts.

While the uncle tutored Marie in Greek, Latin, and the graver studies, she was instructed in Italian, general literature, poetry, and the light artillery of accomplishments by the Abbé Ménage—a man of wit and many tongues, whose susceptibility soon succumbed to the attractions of his pupil—and John Chapelain, author of a long-winded but short-lived poem, *Pucelle*, a man of capacity, who, although not insensible to Marie's grace and wit, kept most of his enthusiasm for his own muse and her indifferent offspring. He was, however, among the earliest and most earnest defenders of his pupil in time of need.

What delightful days were those in the forest of Bondy! How happily and beneficially her days of girlhood passed, guided by love and judgment, nurtured by enjoyable studies, calmed by the surrounding aspect of nature, or pleasantly sporting in the gardens of the priory with her cousin Emmanuel—"le petit Coulanges"—who afterward was known as the jovial *raconteur*, the comedian of society, full of song, story, sentiment, enhancing each by the acted expressiveness of his rendition—whose tendency to the comic was so irresistible that he could not even suffer seriously, but while screaming with the pangs of the gout, did it, says Madame De Sévigné, as if it were a joke. The blessings of Livry were never forgotten by Marie. Her uncle's care was the source of eternal thanks. He lived long, for half a century was her best friend and counselor, and throughout her career she yearned toward him with increasing affection, reliance, and gratitude.

When Marie, at the age of seventeen, left Livry, and was introduced into Parisian circles, she at once created a sensation. The variety of her attainments surprised all. Witty with the wits, scholastic with the erudite, beautiful among beauties, grave or gay, and with a charm of manner that attracted confidence and dispelled rivalry. At this period she was distinguished by a brilliant clear complexion, with hair to suit, fair, thick, and wavy, fresh and rosy lips, and a fine figure. She often expressed dissatisfaction with her nose, which was somewhat square, as was the contour of her jaw; but the smoothness of her dazzling skin, the beauty of her blue eyes, now aflame with the fire of wit, now prayerful under the inspiration of tenderness and feeling, and the general unchecked animation of her features, made the pupil of Livry eminently attractive. In addition to her heavenly eyes and golden hair and rich brain, the bright Burgundian beauty was an heiress. It is almost needless to say that wit, worth, and wealth conspired to make the possessor—that possessor a girl—a bait of unusual splendor, and that Mademoiselle De Rabutin-Chantal was very quickly the centre of a worshiping circle of suitors and admirers. Among these suitors then, and subsequently under less reputable circumstances, but always unsuccessful, was her cousin Bussy-Rabutin. Henri, Marquis de Sévigné, of a noble Breton family, became the chosen competitor, his success being due, it is thought, to the mediation of his uncle, the famous Paul de Gondi, Coadjutor Archbishop of Paris, then deemed the most rising man in French affairs, and soon to be known as the Cardinal de Retz, and the soul of the Fronde.

There is no reason to doubt that Mademoiselle Chantal loved M. De Sévigné, and wed him of her free will and choice; however, his connection with so rising a man as De Gondi may have had its effect in making the Abbé de Coulanges solicitous for the match. Young and handsome, with the

* *Madame De Sévigné, her Correspondents and Contemporaries.* By the Comtesse de Puliga. In two volumes. London: Tinsley Brothers, 1873.

light of a lover illuminating a naturally gay disposition, it is not wonderful that De Sévigné's baser characteristics were a blank to the dazzling Marie's want of worldly experience, especially when those around her did not take pains to analyze too closely the nature of one whose powerful connections gave promise of future prominence in the state.

She was affianced when scarcely eighteen years old, was to be married in the merry May time, but an ebullition of De Sévigné's temper postponed the nuptials for some three months. Crossing the Pont Neuf, he met a Breton gentleman who had "spoken to his discredit." He struck him with the flat of his sword: a meeting ensued, and the marquis was dangerously wounded. He survived, and on the 4th of August, 1644, Marie de Rabutin-Chantal became the Marquise de Sévigné—the possessor of a name which her virtues and talents were to immortalize. She was the victim of the duello. She was born in the days made gloomy by its results. It changed the May days which were to have been those of her honeymoon into sad anxiety over the couch of her betrothed. In a few years it was to consign her to a perpetual widowhood.

The young pair, possessing all that could make life desirable, went soon after their marriage to The Rochers, their home in Brittany. Having enjoyed a life of tranquillity and apparent happiness for some eighteen months, they returned to Paris in the middle of 1646, and on the 10th October following the marquise gave birth to that daughter upon whom she lavished so much anxiety and affection.

Now the youthful marquise found herself in the midst of all that was pleasant and agreeable in Paris. The Hôtel de Rambouillet, with its happy innovations on the prevailing style of architecture, having the windows opening to the ground, and into the garden, which extended back to the Carrousel and the Tuileries, was the chief theatre dedicated to pleasure and intelligence at the time. Madame De Rambouillet having been early afflicted with a malady which compelled her to shun both fire and sunlight, made a great virtue of this necessity, took to her *ruelle*,* and attracted around her a circle of brains and beauty, with a fringe of rank, fashion, and varied ability. At the time of Madame De Sévigné's *rentrée* into Parisian society Madame De Rambouillet was fifty-eight years old. By birth a Roman, she was married at twelve, retired from the pleasures of the Louvre at twenty, and initiated the gatherings which have made her name and hotel famous. In her youth French society was uncouth, French manners rough. She set out to tame the one and polish the other, and she had the good sense to see and feel that intellect, and not birth or rank, was the touch-stone of the needed reformation. Talent and good manners, therefore, were the leading passports to her favor and society. A woman of refinement, purity, taste, and appreciation, she gave encouragement and approval where it was most beneficial without creating rivalries by partisanship, which was a very difficult position to maintain.

Mademoiselle De Scudéry, the manufacturer of mammoth romances, occupying half a score volumes each, at an early period made one of the select circle of the Hôtel de Rambouillet, and has given us a description of its mistress, under the name of Cléomire, in her elaborate manner, a passage of which, as a *résumé* of all, must suffice: "If there was a wish to embody Chastity," writes the worshipful Scudéry, "I would give her the aspect of Cléomire; to make Glory loved by all, I would again represent Cléomire; and if Virtue took a human garb, it must be that of Cléomire." Madame De Rambouillet was assisted in her receptions by her daughters, Julie and Angélique, especially the former, who for twenty years was the inspiration of poets, the worshiped of men, and even of women, whose amiability was such that she discouraged lovers without displeasing them. Madame De Sablé used to say, probably to tease her friend's male worshipers, she could conceive no greater felicity on earth than to spend her life with Mademoiselle De Rambouillet. Brought up in the pleasures of her mother's circle, and the concentrated sentimentality which led to later and less platonic extravagances in gallantry, Mademoiselle Julie was a faithful illustration of both. She felt so happy in being adored as a sort of movable shrine that she resisted all offers of marriage, and only yielded to her mother's wishes when she was *passée*, and recompensed the Marquis de Montausier, who had been prostrate at her feet for fourteen years.

From a familiar affectation in addressing each other as "*ma précieuse*," the most distinguished coterie of the Hôtel de Rambouillet became known as *Les Précieuses*, a name retained by Molière in his comedy in which he so severely ridiculed these followers. Madame De Rambouillet certainly contributed much to transform the rough manners of the early days of the seventeenth century, but her coterie went from one extreme to the

* "The bed, at that time monumental and magnificently adorned, stood in the centre of one end of the room, and for princesses and ladies of high quality it was raised from the ground by a few steps, called the *estrade*. Near the foot of the bed, and dividing the apartment, stood a gilt balustrade, such as may still be seen in the room of Louis XIV. at Versailles. Each side of the bed within that reserved space was called the *ruelle;* it was often still more inclosed by a colonnade reaching from the ground to the ceiling, and it then formed an alcove."—*Comtesse de Puliga*, p. 41.

other. Rushing from rude customs, it assumed classic names, cultivated a painfully turgid platonism, and encouraged to an absurd extent the forms of gallantry while discountenancing its spirit. Under this system society became stilted and sentimental to a morbid degree, and language was used not so much for its point as for its color, not for the reality of its meaning, but for its suitability of sound and picturesqueness of form. Mademoiselle De Scudéry, "the incomparable Sappho" of the blue-stockings, has left us a picture of the morals and manners of this society, without an outline at least of which it is impossible to understand much of the spirit of that era.

Love was the rule—a necessity of good-breeding. All men should be enamored, and all women loved. Indifference was such a reproach that those who were not, pretended to be in love. Custom did not require women to love, but only to suffer to be loved, while, however, they were not forbidden to acknowledge the perseverance of their lovers by an affection perfectly pure. They were permitted "to employ innocent artifices to subdue the hearts of men," as all a woman's glory consisted in making illustrious conquests, and holding the lovers she subdued. It was correct to treat lovers with great rigor, but also a necessity to be abounding in charms, artifice, and amiability to overcome the possible cold results of that rigor. Thus every belle had to be sufficiently cold to chill the ardor of gallantry without freezing it, and sufficiently coquettish to encourage without inflaming it; she was to check and to cheer it at the same time. To be an *honnête homme*, as the phrase went, a perfect gentleman in society, was to be brave, witty, gallant, making eternal love or love speeches, and paying homage to some lady who accepted, "and whose good name was by no means sullied by it." In this way the "incomparable Sappho" thought the *beau monde* of her day had discovered how "to blend innocence and love," and the mode of spending "a life at once agreeable and diverting."

The Hôtel de Rambouillet became a sort of inner temple, where these doctrines were worshiped and promulgated. Even royal princesses waived custom in favor of this centre of Parisian civilization. All the poets, wits, philosophers, and statesmen, all the belles and beaux of the time, assembled in and around the *ruelle* of the "incomparable Arthénice," as the elegantly tranquil madame was styled. Here Mazarin played cards and Balzac had his group of listeners; here La Rochefoucauld made "maxims" and Ménage discussed foreign verses; here Gondi remembered he was a swordsman and gallant before he took orders; here came Foucquet, "the financier," and St. Pavin and Montreuil, making bonmots and complimentary verses; here "le petit Coulanges," the Yorick of every salon, set the blue room in a roar, while Bussy-Rabutin was doubtless pushing an intrigue; here Chapelain "deigned to read some fragments of his long-expected *Pucelle*;" here Voiture, the audacious, with his verses and vividly felicitous impromptus, was most welcome of all; and here, greatest of all, Pierre Corneille received a warm greeting; but his serious and quiet manners were in tame contrast to Voiture's self-sufficient brilliancy, and not calculated to make him, as Madame De Motteville has it, "an ornament of the '*belles ruelles*.'" He read betimes, in his timid way, passages from those tragedies of which it has been said that all the heroines are Frondeuses, but was oftenest silent. "Seated on one of the low stools reserved for those of inferior birth, he allowed the minor luminaries to chatter and please."

Of course the high-sounding sentimentality and artificial gallantry of *Les Précieuses* could not be sustained forever. Flesh and blood could not stand it. As time progressed the real invaded the artificial, and society gained something in the way of nature and lost considerable in the way of character. Not that nature and character were incompatible, but "society," in forming its character, had so fooled nature that the latter, watching its occasion, and using the forms of fashion to reassert itself, found sentimental innocence a bait for intrigue, and artificial simplicity a susceptible clew to scandal. Thus jaunty scheming took advantage of sentiment, and gallant blacklegs mingled with the blue-stockings of the blue room of the Hôtel de Rambouillet. Instead of pretending to be in love *à la mode*, beaux ran each other through for a smile or a frown; real love intrigues bourgeoned out of the apparently barren soil of artificial admiration, until society became that cavalier, verse-making, verse-loving, love-making, letter-writing, salon-gathering, witty, reckless, audacious, rival-hating, and intriguing aristocracy that greeted Madame De Sévigné. It is just to remark that the mistress of the Hôtel de Rambouillet came through an era of intrigues unsullied; "in no pamphlet of that period does one word tarnish her fame."

Young as she was, Madame De Sévigné was neither absorbed nor carried away by the society of the Hôtel de Rambouillet. She was as far removed from pedantry as prudery, and retained only such of the ruling principles as were elevating. While her sprightly humor and zest for amusement were captivating, her sense and modesty were self-preservative. She was not only an attraction at the Hôtel de Rambouillet, but she had a little court of her own, and was surrounded by suitors. Among these were her handsome, brilliant, and treacher-

ous cousin Bussy; the tender and passionate Comte du Lude, discreet and dangerous, whose tearful implorations made him "formidable to the peace and reputation" of the fair; the Comte de Vassé, the Comte de Montmoron, and the Marquis de Noirmoutier, assiduous admirers; her old teacher Ménage; the pleasant, humpbacked Abbé St. Pavin, whose pen found its best inspiration in the charms and society of his neighbor's niece; the pedantic Chevalier de Méré, eminently befooled by the *Précieuses* and tolerated by madame; the jovial and indolent Abbé de Montreuil, a most delicate concocter of compliments. Seeing his hostess play blindman's-buff, he improvised a quatrain, saying, that with her eyes bandaged they took her for Love, and with eyes uncovered for his mother. There was also Marigny, prompt with song and repartee; and Segrais, a man of the world, who openly professed more than friendship for the Burgundian siren, but who acknowledged his hopelessness. Her freedom of manner and indiscretion of speech added dangerous piquancy to her other charms. Her want of circumspection in language in contrast to her purity of action has naturally attracted comment. But some idea of the manners and speech of that day may be found in the fact that for checking expressions in the first society which would now be intolerable in any decent circle Madame De Rambouillet acquired a reputation for most exaggerated fastidiousness.

The wit, beauty, and manners of the youthful marquise were a sufficient temptation to the love-making abbés and courtier blacklegs of the day, without having a reprobate husband whose neglect left her a prey to subtle and audacious consolers. Alas! too soon did M. De Sévigné prove faithless, and as fickle as faithless, loving on all sides, and ruining his young wife with the extravagance of his expenditures on worthless women. Her grief was great, but also was her heart and her devotion. She smothered her sorrows in efforts to reclaim him. She persistently loved him; and though she could not be blind to his infidelities, wished to be so in the belief that *her* devotion would re-create his. In this hope she induced him to quit Paris and go to Les Rochers, where, early in 1648, their son was born.

The breaking out of the war of the Fronde later in this year took them from their Breton château, and again they are in Paris, and again the poor wife suffers from the neglect of a faithless husband. In 1650 Bussy, ever on the watch to weaken his cousin's faith and advance his own infamous designs, informed Madame De Sévigné that her husband was the favored lover of the wonderful Ninon de l'Enclos, then thirty-four years old, in the meridian of her brilliant beauty and destructive witchery. This disclosure almost mastered her patience, and unable to conceal her grief, she intimated the sad knowledge to her husband. He soon conjectured the source of information, and next day upbraided Bussy, who actually was the confidant of his passion for Ninon. Bussy boldly denied having broken faith, and assured him that madame had simply guessed the state of affairs. Having appeased the husband, he wrote to the wife, sneering at her want of prudence, and advising her that jealousy was more efficient to retain a heart than beauty. "I advise you," he writes, "to make your husband jealous, my fair cousin, and for this purpose I offer myself to you."

Madame was not awake when the letter arrived, and it fell into the hands of Monsieur De Sévigné, who read it, and dismissed the bearer with, "No answer." Bussy was in a frenzy at the *dénouement* of this little comedy, and was inclined to kill the page who had rendered his wiles and his plans abortive. He was forbidden the house, and got married soon after, which did not prevent him, however, resuming correspondence with his cousin in his usual style of gallant familiarity.

Ninon was as fickle as her new and envied lover. "Three months were for her three centuries," and soon Rambouillet de la Sablière took the place of Henri de Sévigné. The counsels of the abbé uncle now prevailed; madame's fortune was placed out of the power of her husband, greatly against her will; and he, taking her to Les Rochers, hurried back to Paris and a fresh intrigue. His new passion was a Madame De Gondran, the gay wife of a wealthy *bourgeois*, who became extravagantly infatuated by the attention of "les gens de la cour," and achieved complete empire over the weak disposition of De Sévigné. He kept himself and her other lovers in a fever of excitement, and by a series of dramatic complications was brought into a duel with the Chevalier d'Albret, to whom Madame De Gondran had denied herself four times. They fought on the 4th of February, 1651, and De Sévigné received a fatal wound. The news brought the devoted wife to Paris, but too late to see her husband alive. He died two days after the affray, at the age of thirty-two, just as his wife completed her twenty-fifth year.

The grief of Madame De Sévigné was poignant and sincere, for she loved him who had confessed that "for others she might be the most agreeable woman in the world, but that he could not love her." She passed nine months of regret at The Rochers, during which "she embraced the holy vocation of perpetual widowhood and devoted maternity." Her return to Paris at the close of 1651 was chronicled by Loret, who versified the events of society, as the coming of a chaste turtle-dove who had been mourning her mate in the country. Her youth,

MARQUISE DE SÉVIGNÉ.—A LATER PORTRAIT.

happy disposition, and keen sense of enjoyment seemed now more than ever calculated to surround her with peril. If she had been admired and wooed before, the new position of the "veuve jeune et belle" added greatly to the interest she excited; and at no period did there exist the snares and temptations arising from an intense love of light pleasures and dissipation as at that when she resumed her place in the gay circles of the capital. Mademoiselle, the cousin of the king, occupied the Tuileries, and gave brilliant entertainments, at which the witty widow often shone. She was on intimate terms with the Duchesse de Longueville, the Duchesse de Chevreuse, and the Duchesse de Châtillon, a daughter of her father's friend who had the duel on Easter-Sunday. Her aunts—Sévigné and Coulanges—gathered choice company at their houses; Madame Du Plessis-Guénégaud, of great wealth and intelligence, who instigated Foucquet to help authors and artists, was the "charming Amalthée" of an "enchanted palace"—the Hôtel de Nevers—where poets and their admirers congregated; and she visited also Sappho Scudéry, whose *ruelle* was, though on a lesser scale than that of Madame De Rambouillet, the resort of wits and flirts of both sexes.

In the summer following the Duc de Rohan, that noted Chabot whose good looks and grace as a dancer won the proudest heiress in France, and a leading title also, had a great feud with the Marquis de Tonquedec, growing from rivalry to be distin-

guished by Madame De Sévigné. This was the cause of much notoriety, which she could but shun and could not control, as well as many painful emotions which her principles could not repress. She sought solace in the solitude of The Rochers, and in the care of her children, whose happiness was the passion of her existence. In Paris, in the winter of 1653–54, she is more than ever surrounded and courted, by the brave, the great, the magnificent, even by the blood royal: but by a tact which seemed an inspiration she preserved her truth without humiliating her adorers. The Comte du Lude was still her faithful and discreet admirer. The Prince de Conti, brother of Condé, although recently married to a good and lovable woman, was attracted by the charms of the turtle-dove of Les Rochers, and was ceaseless in attempts to win her notice. "It is necessary," says the Comtesse de Puliga, justly, "to read the memoirs of the seventeenth century to comprehend and value the prestige of princes of the blood, and to understand how leniently the world looked upon their weaknesses." Had Madame De Sévigné listened to so exalted a lover, "she would have reaped more outward consideration than condemnation." Even Bussy gave way for the prince, and in his rascal way sought to instigate his cousin to ruin. Writing to her, he says: "Fortune is making you great advances, my dear cousin; be not ungrateful. You are as much attached to virtue as if it were something solid, and you despise wealth as if you could never need it." But if the personal ambition of Bussy would make him a pander to the prince, it was otherwise with Foucquet, the Surintendant des Finances, whose boundless control of wealth often helped him to triumph. He failed with Madame De Sévigné, yet retained her friendship, and even in his adversity held her affectionate sympathy. An envious attempt was made to involve her good name at the time of his arrest; but her letters, found in his chest, were solely of family matters, and the king himself declared they were "such as to do her honor." Foucquet appropriated the finances, and presented Louis XIV. with fictitious accounts, which were daily contradicted by Colbert, then "wending his way." In the midst of his magnificence and power Foucquet was overwhelmed, and ended his days, almost forgotten, after fourteen years' close imprisonment, in Pignerol. Madame De Sévigné's letters give a vivid narrative of his fall and trial. Turenne, the great captain, also found in Madame De Sévigné a citadel his art could not capture. She had to deny herself to him to guard her reputation, yet on his death—twenty years after, to be sure—remembers only his glory as "the greatest captain and the most honorable man in the world."

In the winter of 1662–63 an event always of interest to a mother took place. Her daughter appeared at court, and the sensation made by her beauty and accomplishments delighted the mother, by whom she was so beloved. Although the daughter lacked the warmth and geniality which rendered the mother so fascinating, and placed a value on her own charms which amounted to self-worship, she won "all the favors which the court could bestow and the world envy." She took part in the splendid ballets projected or invented by Louis XIV., and in which he appeared himself, surrounded by dukes and marquises and the flower of the girlhood and womanhood of the time. She became the theme of poets and the admiration of gallants, but her reputation was saved by the coldness of her manner. At one time the attention of the king "seemed likely to ripen into more tender sentiments," but this "excess of honor, or indignity," fell to the share of Madame De Montespan. At last, after some years of motherly anxiety to have her daughter—who was approaching the advanced age of twenty-three—settled, Madame De Sévigné had the satisfaction of seeing Mademoiselle Françoise married, in 1669, to the Comte de Grignan, of a good family, who had been already twice married, and held the office of lieutenant-general of the king in Languedoc. About the period of this alliance her son, Charles de Sévigné, then over twenty, and impatient for distinction, joined an expedition to aid Venice against the Turks, and won a character for valor which he was destined to sustain. He had the family strength for gallantry, at least at one portion of his life the paternal weakness for dissipation, and actually fell into the snares of the same Ninon de l'Enclos, still lovely and attractive at fifty-four, who had helped to ruin his father a quarter of a century previous.

As life progressed Madame De Sévigné continued to enjoy the society and friendship of the most eminent men of her time. There is scarcely a name of that wonderful period—famous in letters, state-craft, the field, the pulpit, or the stage—of which there are not reminiscences in her charming letters. The writers who lead French tragedy and comedy, Corneille, Racine, Molière; the preachers who have never been surpassed in French pulpits, Bossuet, Bourdaloue, Massillon, Fléchier; the poets, satirists, moralists, fabulists, and essayists—the Boileaus, La Rochefoucaulds, Pascals, La Fontaines, with numbers of others then scarcely less, some even better known, but now of not so much interest—live, read, sparkle, or moralize in her remarkable pages. From the saint to the sinner, from the noble-souled Abbé de Coulanges to the depraved Bussy, from Sainte Chantal, who left her father, to the sinner Ninon, who captured her hus-

band, her son, and even her grandson, the correspondence of Madame De Sévigné presents every variety of humanity, aiding to make or unmake opinion, or illustrating society in the memorable reign of Louis Quatorze.

Passing her time in country or city, Madame De Sévigné kept up that correspondence with her daughter upon which mainly her great reputation as a writer depends. Every thing of interest to her she deems of interest to her child, from whom absence was a pang never ameliorated, and which was occupied by communicating with her. This intense, ever-solicitous, and never-varying devotion of the mother does not seem to have been highly or even adequately appreciated by the daughter. This ever-restless, overanxious maternal solicitude of Madame De Sévigné, which never left her, is in strong contrast to the calm spirit of her grandmother, who could and did leave her children and the world at the same time. Her death was in keeping with that maternal spirit of sacrifice she was always only too desirous of making. The daughter's illness at Grignan brought the devoted mother to her bedside. Her excessive sympathy with the invalid made her declare she was dying of the illness of her daughter. Her feelings were a premonition of fate. At the beginning of April, 1696, the small-pox seized her, and on the 17th she closed her life—with no relative's voice, no relative's palm, to soothe or soften the departure. "The woman who had lived entirely for her children was childless in that last supreme moment."

And thus passed away a woman of exceeding ability and force of character; one who, no doubt not deeming herself among the literary lights of her time, is yet held by Lamartine to be the Petrarch of French prose. Her letters were not given to the world for thirty years after she had left it, yet it is indubitable testimony to their style, merits, and historical usefulness that they are still held unrivaled as pictures, less purely brilliant than vividly drawn, of men, manners, and society in the seventeenth century. Lamartine makes her in some respects one of the representative women of the world in putting her among his "Celebrated Characters;" and her latest biographer, the Comtesse de Puliga, from whose interesting work we have chiefly drawn the facts of this article, illustrates her career with loving and industrious discrimination. If Lamartine's treatment of Madame De Sévigné is in a romantic mood of appreciation, the facts in Comtesse de Puliga's work justify it. In reading the letters which made Walpole worship her, we are led to think with Mackintosh that she has probably become an immortal writer without expecting it. As a wife, mother, and woman she has as many claims for love on her own sex as her wit and letters command from the opposite.

Orphaned at seventeen months, but seven years old when her mother died, little more than eight when the death of her maternal grandmother left her without the guardianship of any womanly solicitude, wed at eighteen, and a widow at twenty-five, there seems, indeed, little time for the gathering or utilizing of the forces which were to carry her and her alluring beauty and dangerous free wit through such a continuous path of peril. Yet we see her strong, noble, and virtuous, while gay and even indiscreet. She was mirthful without immodesty, and modest without prudery; pure in the midst of impurity, virtuous in an atmosphere of vice. Wed before she was a woman, she remained a girl all her life—full of joyous purity, which is the strongest kind of commonsense, and acting with a fearless freedom, which those whom it defied called insensibility. She loved De Sévigné as a good wife could love a good husband, and diverted the wicked designs of other men like a good woman. While a devotee of her reckless husband, his neglect never brought her to the level of her devotees. She was true to herself as well as to him, and in being the one as the other had need of great tact and courage. Really in those days it was necessary for a beautiful good woman to be a clever diplomate to protect herself from, without seriously offending, the coxcombs and intriguers whose delinquencies could not call forth dismissal. To positively shun them would be to make a parade of virtue no one would appreciate, and which the majority would condemn as hollow prudery. Humiliated cavaliers could be calumniators, as Bussy once threatened his cousin, and were as dangerous as successful gallants.

While a woman of society, Madame De Sévigné loved the country. From the days of her pupilage at Livry to her last journey she never failed to take comfort from the air, the quiet, the scenery, the sensations of country life. Les Rochers are eternally twined with her name and fame, as with the epochs when she sought peace of mind or wept in solitude. There is something that fills up the demands of nature in the fact that while the beloved of fashion, she loved the fields. Shining in the court, she sought domestic life in the country. Apparently made alone to shine amidst the blaze of wit, she realized equal enjoyment in the sombre woods, and was a contented worshiper of nature in its wildest and sometimes least inviting forms. This dualism of feeling or appreciation was exemplified in her manner, which had the freedom of the woods and the *finesse* of the city; and both were indispensable to preserve her sway and protect herself as a queen among women and a woman among queens.

A SIMPLETON.

A STORY OF THE DAY.

By CHARLES READE.

CHAPTER XXII.

WHEN Falcon went, luck seemed to desert their claim: day after day went by without a find; and the discoveries on every side made this the more mortifying.

By this time the diggers at Bulteel's pan were as miscellaneous as the audience at Drury Lane Theatre, only mixed more closely; the gallery folk and the stalls worked cheek by jowl. Here a gentleman with an affected lisp, and close by an honest fellow who could not deliver a sentence without an oath, or some still more horrible expletive that meant nothing at all in reality, but served to make respectable flesh creep; interspersed with these, Hottentots, Kafirs, and wild blue-blacks gayly clad in an ostrich feather, a scarlet ribbon, and a Tower musket, sold them by some good Christian for a modern rifle.

On one side of Staines were two swells, who lay on their backs and talked opera half the day; but seldom condescended to work without finding a diamond of some sort.

After a week's deplorable luck his Kafir boy struck work on account of a sore in his leg; the sore was due to a very common cause—the burning sand had got into a scratch, and festered. Staines, out of humanity, examined the sore; and proceeding to clean it, before bandaging, out popped a diamond worth forty pounds, even in the depreciated market. Staines quietly pocketed it, and bandaged the leg. This made him suspect his blacks had been cheating him on a large scale, and he borrowed Hans Bulteel to watch them, giving him a third, with which Master Hans was mightily pleased. But they could only find small diamonds, and by this time prodigious slices of luck were reported on every side. Kafirs and Boers, that would not dig, but traversed large tracts of ground when the sun was shining, stumbled over diamonds. One Boer pointed to a wagon and eight oxen, and said that one lucky glance on the sand had given him that lot; but day after day Staines returned home, covered with dust and almost blinded, yet with little or nothing to show for it.

One evening, complaining of his change of luck, Bulteel quietly proposed to him migration. "I am going," said he, resignedly; "and you can come with me."

"You leave your farm, Sir? Why, they pay you ten shillings a claim, and that must make a large return: the pan is fifteen acres."

"Yes, mine vriend," said the poor Hollander, "dey pay; but deir money it cost too dear. Vere is mine peace? Dis farm is six tousand acres. If de cursed diamonds was farther off, den it vas vell. Bud dey are too near. Once I could smoke in peace, and zleep. Now diamonds is come, and zleep and peace is fled. Dere is four tousand tents, and to each tent a dawg; dat dawg bark at four tousand oder dawgs all night, and dey bark at him and at each oder. Den de masters of de dawgs dey get angry, and fire four tousand pistole at de four tousand dawgs, and make my bed shake wid de trembling of mine vrow. My vamily is wid diamonds infected. Dey vill not vork. Dey takes long valks, and always looks on de ground. Mine childre shall be humpbacked, roundshouldered, looking down for diamonds. Dey shall forget Gott. He is on high: deir eyes are always on de earth. De diggers found a diamond in mine plaster of mine wall of mine house. Dat plaster vas limestone; it come from dose kopjes de good Gott made in His anger against man for his vickedness. I zay so. Dey not believe me. Dey tink dem abominable stones grow in mine house and break out in mine plaster like de measle: dey vaunt to dig in mine wall, in mine garden, in mine floor. One day dey shall dig in mine body. I vill go. Better I love peace dan money. Here is English company make me offer for mine varm. Dey forgive de diamonds."

"You have not accepted it?" cried Staines, in alarm.

"No, but I vill. I have said I shall tink of it. Dat is my vay. So I say yah."

"An English company? They will cheat you without mercy. No, they shall not, though, for I will have a hand in the bargain."

He set to work directly, added up the value of the claims, at ten shillings per month, and amazed the poor Hollander by his statement of the value of those fifteen acres, capitalized.

And, to close this part of the subject, the obnoxious diamonds obtained him three times as much money as his father had paid for the whole six thousand acres.

The company got a great bargain, but Bulteel received what for him was a large capital, and settling far to the south, this lineal descendant of "le philosophe sans le savoir" carried his godliness, his cleanliness, and his love of peace out of the turmoil, and was happier than ever, since now he could compare his placid existence with one year of noise and clamor.

But long before this, events more pertinent to my story had occurred.

One day a Hottentot came into Bulteel's farm, and went about among the diggers till he found Staines. The Hottentot was one employed at Dale's Kloof, and knew him. He brought Staines a letter.

Staines opened the letter, and another letter fell out; it was directed to "Reginald Falcon, Esq."

"Why," thought Staines, "what a time this letter must have been on the road! So much for private messengers."

The letter ran thus:

"DEAR SIR,—This leaves us all well at Dale's Kloof, as I hope it shall find you and my dear husband at the diggings. Sir, I am happy to say I have good news for you. When you got well, by God's mercy, I wrote to the doctor at the hospital, and told him so. I wrote unbeknown to you, because I had promised him. Well, Sir, he has written back to say you have two hundred pounds in money, and a great many valuable things, such as gold and jewels. They are all at the old bank in Cape Town, and the cashier has seen you, and will deliver them on demand. So that is the first of my good news, because it is good news to you. But, dear Sir, I think you will be pleased to hear that Dick and I are thriving wonderfully, thanks to your good advice. The wooden house it is built, and a great oven. But, Sir, the traffic came almost before we were ready, and the miners that call here, coming and going, every day, you would not believe, likewise wagons and carts. It is all bustle, morn till night, and dear Reginald will never be dull here now. I hope you will be so kind as tell him so, for I do long to see you both home again.

"Sir, we are making our fortunes. The grain we could not sell at a fair price we sell as bread, and higher than in England ever so much. Tea and coffee the same, and the poor things praise us, too, for being so moderate. So, Sir, Dick bids me say that we owe this to you, and if so be you are minded to share, why, nothing would please us better. Head-piece is always worth money in these parts; and if it hurts your pride to be our partner without money, why, you can throw in what you have at the Cape, though we don't ask that. And, besides, we are offered diamonds a bargain every day, but are afraid to deal, for want of experience; but if you were in it with us, you must know them well by this time, and we might turn many a good pound that way. Dear Sir, I hope you will not be offended, but I think this is the only way we have, Dick and I, to show our respect and goodwill.

"Dear Sir, digging is hard work, and not fit for you and Reginald, that are gentlemen, among a lot of rough fellows, that their talk makes my hair stand on end, though I dare say they mean no harm.

"Your bedroom is always ready, Sir. I never will let it to any of them, hoping now to see you every day. You that know every thing, can guess how I long to see you both home. My very good fortune seems not to taste like good fortune, without those I love and esteem to share it. I shall count how many days this letter will take to reach you, and then I shall pray for your safety harder than ever till the blessed hour comes when I see my husband and my good friend, never to part again, I hope, in this world.

"I am, Sir, your dutiful servant and friend, PHŒBE DALE."

"P.S.—There is regular traveling to and from Cape Town, and a Post now to Pniel, but I thought it surest to send by one that knows you."

Staines read this letter with great satisfaction. He remembered his two hundred pounds, but his gold and jewels puzzled him. Still it was good news, and pleased him not a little. Phœbe's good fortune gratified him too, and her offer of a partnership, especially in the purchase of diamonds from returning diggers. He saw a large fortune to be made; and, wearied and disgusted with recent ill luck, blear-eyed and almost blinded with sorting in the blazing sun, he resolved to go at once to Dale's Kloof. Should Mrs. Falcon be gone to England with the diamonds, he would stay there, and Rosa should come out to him, or he would go and fetch her.

He went home and washed himself, and told Bulteel he had had good news, and should leave the diggings at once. He gave him up the claim, and told him to sell it by auction. It was worth two hundred pounds still. The good people sympathized with him, and he started within an hour. He left his pickaxe and shovel, and took only his double rifle—an admirable one—some ammunition, including conical bullets and projectile shells given him by Falcon, a bag full of carbuncles and garnets he had collected for Ucatella, a few small diamonds, and one hundred pounds—all that remained to him, since he had been paying wages and other things for months, and had given Falcon twenty for his journey.

He rode away, and soon put twenty miles between him and the diggings.

He came to a little store that bought diamonds and sold groceries and tobacco. He haltered his horse to a hook, and went in. He offered a small diamond for sale. The master was out, and the assistant said there was a glut of these small stones; he did not care to give money for it.

"Well, give me three dozen cigars."

While they were chaffering, in walked a

Hottentot, and said, "Will you buy this?" and laid a clear, glittering stone on the counter, as large as a walnut.

"Yes," said the young man. "How much?"

"Two hundred pounds."

"Two hundred pounds! Let us look at it." He examined it, and said he thought it was a diamond, but these large stones were so deceitful he dared not give two hundred pounds. "Come again in an hour," said he, "then the master will be in."

"No," said the Hottentot, quietly, and walked out.

Staines, who had been literally perspiring at the sight of this stone, mounted his horse and followed the man. When he came up to him he asked leave to examine the gem. The Hottentot quietly assented.

Staines looked at it all over. It had a rough side and a polished side, and the latter was of amazing softness and lustre. It made him tremble. He said, "Look here, I have only one hundred pounds in my pocket."

The Hottentot shook his head.

"But if you will go back with me to Bulteel's farm, I'll borrow the other hundred."

The Hottentot declined, and told him he could get four hundred pounds for it by going back to Pniel. "But," said he, "my face is turned so, and when Squat turn his face so, he going home. Not can bear go the other way then;" and he held out his hand for the diamond.

Staines gave it him, and was in despair at seeing such a prize so near, yet leaving him.

He made another effort. "Well, but," said he, "how far are you going this way?"

"Ten days."

"Why, so am I. Come with me to Dale's Kloof and I will give the other hundred. See, I am in earnest, for here is one hundred, at all events."

Staines made this proposal, trembling with excitement. To his surprise and joy the Hottentot assented, though with an air of indifference, and on these terms they became fellow-travelers, and Staines gave him a cigar. They went on side by side, and halted for the night forty miles from Bulteel's farm.

They slept in a Boer's outhouse, and the vrow was civil, and lent Staines a jackal's skin. In the morning he bought it for a diamond, a carbuncle, and a score of garnets; for a horrible thought had occurred to him—if they stopped at any place where miners were, somebody might buy the great diamond over his head. This fear, and others, grew on him, and, with all his philosophy, he went on thorns, and was the slave of the diamond.

He resolved to keep his Hottentot all to himself if possible. He shot a springbok that crossed the road, and they roasted a portion of the animal, and the Hottentot carried some on with him.

Seeing he admired the rifle, Staines offered it him for the odd hundred pounds, but, though Squat's eye glittered a moment, he declined.

Finding that they met too many diggers and carts, Staines asked his Hottentot was there no nearer way to reach that star, pointing to one he knew was just over Dale's Kloof.

Oh yes, he knew a nearer way, where there were trees and shade and grass, and many beasts to shoot.

"Let us take that way," said Staines.

The Hottentot, ductile as wax, except about the price of the diamond, assented calmly; and next day they diverged, and got into forest scenery, and their eyes were soothed with green glades here and there, wherever the clumps of trees sheltered the grass from the panting sun. Animals abounded, and were tame; Staines, an excellent marksman, shot the Hottentot his supper without any trouble.

Sleeping in the wood, with not a creature near but Squat, a sombre thought struck Staines. Suppose this Hottentot should assassinate him for his money, who would ever know? The thought was horrible, and he awoke with a start ten times that night. The Hottentot slept like a stone, and never feared for his own life and precious booty; Staines was compelled to own to himself he had less faith in human goodness than the savage had. He said to himself, "He is my superior. He is the master of this dreadful diamond, and I am its slave."

Next day they went on till noon, and then they halted at a really delightful spot; a silver kloof ran along a bottom, and there was a little clump of three acacia-trees that lowered their long tresses, pining for the stream, and sometimes getting a cool, grateful kiss from it when the water was high.

They haltered the horse, bathed in the stream, and lay luxurious under the acacias. All was delicious languor and enjoyment of life.

The Hottentot made a fire, and burned the remains of a little sort of kangaroo Staines had shot him the evening before; but it did not suffice his maw, and looking about him, he saw three elands leisurely feeding about three hundred yards off. They were cropping the rich herbage close to the shelter of a wood.

The Hottentot suggested that this was an excellent opportunity. He would borrow Staines's rifle, steal into the wood, crawl on his belly close up to them, and send a bullet through one.

Staines did not relish the proposal. He had seen the savage's eye repeatedly gloat on the rifle, and was not without hopes he might even yet relent, and give the great

diamond for the hundred pounds and this rifle; and he was so demoralized by the diamond, and filled with suspicions, that he feared the savage, if he once had the rifle in his possession, might cut, and be seen no more, in which case he, Staines, still the slave of the diamond, might hang himself on the nearest tree, and so secure his Rosa the insurance money, at all events. In short, he had really diamond on the brain.

He hem'd and haw'd a little at Squat's proposal, and then got out of it by saying, "That is not necessary. I can shoot it from here."

"It is too far," objected Blacky.

"Too far! This is an Enfield rifle. I could kill the poor beast at three times that distance."

Blacky was amazed. "An Enfeel rifle," said he, in the soft musical murmur of his tribe, which is the one charm of the poor Hottentot; "and shoot three times *so* far."

"Yes," said Christopher. Then, seeing his companion's hesitation, he conceived a hope. "If I kill that eland from here, will you give me the diamond for my horse and the wonderful rifle—no Hottentot has such a rifle."

Squat became cold directly. "The price of the diamond is two hundred pounds."

Staines groaned with disappointment, and thought to himself, with rage, "Any body but me would club the rifle, give the obstinate black brute a stunner, and take the diamond—God forgive me!"

Says the Hottentot, cunningly, "I can't think so far as white man. Let me see the eland dead, and then I shall know how far the rifle shoot."

"Very well," said Staines. But he felt sure the savage only wanted his meal, and would never part with the diamond except for the odd money.

However, he loaded his left barrel with one of the explosive projectiles Falcon had given him; it was a little fulminating shell with a steel point. It was with this barrel he had shot the murcat overnight, and he had found he shot better with this barrel than the other. He loaded his right barrel then, saw the powder well up, capped it, and cut away a strip of the acacia with his knife to see clear, and lying down in volunteer fashion, elbow on ground, drew his bead steadily on an eland that presented him her broadside, her back being turned to the wood. The sun shone on her soft coat, and never was a fairer mark, the sportsman's deadly eye being in the cool shade, the animal in the sun.

He aimed long and steadily. But, just as he was about to pull the trigger, Mind interposed, and he lowered the deadly weapon. "Poor creature!" he said, "I am going to take her life—for what? for a single meal. She is as big as a pony; and I am to lay her carcass on the plain, that we may eat two pounds of it. This is how the weasel kills the rabbit; sucks an ounce of blood for his food, and wastes the rest. So the demoralized sheep-dog tears out the poor creature's kidneys, and wastes the rest. Man, armed by science with such powers of slaying, should be less egotistical than weasels and perverted sheep-dogs. I will not kill her. I will not lay that beautiful body of hers low, and glaze those tender, loving eyes that never gleamed with hate or rage at man, and fix those innocent jaws that never bit the life out of any thing, not even of the grass she feeds on, and does it more good than harm. Feed on, poor innocent. And you be blanked; you and your diamond, that I begin to wish I had never seen; for it would corrupt an angel."

Squat understood one word in ten, but he managed to reply. "This is nonsense-talk," said he, gravely. "The life is no bigger in that than in the murcat you shot last shoot."

"No more it is," said Staines. "I am a fool. It is come to this, then: Kafirs teach us theology, and Hottentots morality. I bow to my intellectual superior. I'll shoot the eland." He raised his rifle again.

"No, no, no, no, no, no," murmured the Hottentot, in a sweet voice scarcely audible, yet so keen in its entreaty that Staines turned hastily round to look at him. His face was ashy, his teeth chattering, his limbs shaking. Before Staines could ask him what was the matter he pointed through an aperture of the acacias into the wood hard by the elands. Staines looked, and saw what seemed to him a very long dog, or some such animal, crawling from tree to tree. He did not at all share the terror of his companion, nor understand it. But a terrible explanation followed. This creature, having got to the skirt of the wood, expanded, by some strange magic, to an incredible size, and sprang into the open with a growl, a mighty lion: he seemed to ricochet from the ground, so immense was his second bound, that carried him to the eland, and he struck her one blow on the head with his terrible paw, and felled her as if with a thunder-bolt. Down went her body, with all the legs doubled, and her poor head turned over, and the nose kissed the ground. The lion stood motionless. Presently the eland, who was not dead, but stunned, began to recover and struggle feebly up. Then the lion sprang on her with a roar, and rolled her over, and, with two tremendous bites and a shake, tore her entrails out and laid her dying. He sat composedly down, and contemplated her last convulsions without touching her again.

At his roar, though not loud, the horse, though he had never heard or seen a lion, trembled and pulled at his halter.

Blacky crept into the water, and Staines was struck with such an awe as he had never felt. Nevertheless, the king of beasts be-

ing at a distance and occupied, and Staines a brave man and out of sight, he kept his ground and watched, and by those means saw a sight never to be forgotten. The lion rose up, and stood in the sun, incredibly beautiful as well as terrible. His was not the mangy hue of the caged lion, but a skin tawny, golden, glossy as a race-horse, and of exquisite tint that shone like pure gold in the sun; his eye a lustrous jewel of richest hue, and his mane sublime. He looked toward the wood, and uttered a full roar. This was so tremendous that the horse shook all over as if in an ague, and began to lather. Staines recoiled, and his flesh crept, and the Hottentot went under water, and did not emerge for ever so long.

After a pause the lion roared again, and all the beasts and birds of prey seemed to know the meaning of that terrible roar. Till then the place had been a solitude, but now it began to fill in the strangest way, as if the lord of the forest could call all his subjects together with a trumpet roar: first came two lion cubs, to whom, in fact, the roar had been addressed. The lion rubbed himself several times against the eland, but did not eat a morsel, and the cubs went in and feasted on the prey. The lion politely and paternally drew back, and watched the young people enjoying themselves.

Meantime approached, on tiptoe, jackals and hyenas, but dared not come too near. Slate-colored vultures settled at a little distance, but not a soul dared interfere with the cubs; they saw the lion was acting sentinel, and they knew better than come near.

After a time, papa feared for the digestion of those brats, or else his own mouth watered; for he came up, knocked them head over heels with his velvet paw, and they took the gentle hint, and ran into the wood double quick.

Then the lion began tearing away at the eland, and bolting huge morsels greedily. This made the rabble's mouth water. The hyenas and jackals and vultures formed a circle ludicrous to behold, and that circle kept narrowing as the lion tore away at his prey. They increased in numbers, and at last hunger overcame prudence; the rear rank shoved on the front, as among men, and a general attack seemed imminent.

Then the lion looked up at these invaders, uttered a reproachful growl, and went at them, patting them right and left, and knocking them over. He never touched a vulture, nor, indeed, did he kill an animal. He was a lion, and only killed to eat; yet he soon cleared the place, because he knocked over a few hyenas and jackals, and the rest, being active, tumbled over the vultures before they could spread their heavy wings. After this warning they made a respectful circle again, through which, in due course, the gorged lion stalked into the wood.

A savage's sentiments change quickly, and the Hottentot, fearing little from a full lion, was now giggling at Staines's side. Staines asked him which he thought was the lord of all creatures, a man or a lion.

"A lion," said Blacky, amazed at such a shallow question.

Staines now got up, and proposed to continue their journey. But Blacky was for waiting till the lion was gone to sleep after his meal.

While they discussed the question the lion burst out of the wood within hearing of their voices, as his pricked-up ears showed, and made straight for them at a distance of scarcely thirty yards.

Now, the chances are, the lion knew nothing about them, and only came to drink at the kloof after his meal, and perhaps lie under the acacias: but who can think calmly, when his first lion bursts out on him a few paces off? Staines shouldered his rifle, took a hasty, flurried aim, and sent a bullet at him.

If he had missed him, perhaps the report might have turned the lion; but he wounded him, and not mortally. Instantly the enraged beast uttered a terrific roar, and came at him with his mane distended with rage, his eyes glaring, his mouth open, and his whole body dilated with fury.

At that terrible moment Staines recovered his wits enough to see that what little chance he had was to fire into the destroyer, not at him. He kneeled, and leveled at the centre of the lion's chest, and not till he was within five yards did he fire. Through the smoke he saw the lion in the air above him, and rolled shrieking into the stream, and crawled like a worm under the bank, by one motion, and there lay trembling.

A few seconds of sick stupor passed: all was silent. Had the lion lost him? Was it possible he might yet escape?

All was silent.

He listened, in agony, for the sniffing of the lion, puzzling him out by scent.

No: all was silent.

Staines looked round, and saw a woolly head and two saucer eyes and open nostrils close by him. It was the Hottentot, more dead than alive.

Staines whispered him, "I think he is gone."

The Hottentot whispered, "Gone a little way to watch. He is wise as well as strong." With this he disappeared beneath the water.

Still no sound but the screaming of the vultures, and snarling of the hyenas and jackals over the eland.

"Take a look," said Staines.

"Yes," said Squat; "but not to-day. Wait here a day or two. Den he forget and forgive."

Now Staines, having seen the lion lie

down and watch the dying eland, was a great deal impressed by this; and as he had now good hopes of saving his life, he would not throw away a chance. He kept his head just above water, and never moved.

In this freezing situation they remained.

Presently there was a rustling that made both crouch.

It was followed by a croaking noise.

Christopher made himself small.

The Hottentot, on the contrary, raised his head, and ventured a little way into the stream.

By these means he saw it was something very foul, but not terrible. It was a large vulture that had settled on the very top of the nearest acacia.

At this the Hottentot got bolder still, and, to the great surprise of Staines, began to crawl cautiously into some rushes, and through them up the bank.

The next moment he burst into a mixture of yelling and chirping and singing and other sounds so manifestly jubilant that the vulture flapped heavily away, and Staines emerged in turn, but very cautiously.

Could he believe his eyes? There lay the lion, dead as a stone, on his back, with his four legs in the air, like wooden legs, they were so very dead; and the valiant Squat dancing about him, and on him, and over him.

Staines, unable to change his sentiments so quickly, eyed even the dead body of the royal beast with awe and wonder. What, had he really laid that terrible monarch low, and with a tube made in a London shop by men who never saw a lion spring, nor heard his awful roar shake the air? He stood with his heart still beating, and said not a word. The shallow Hottentot whipped out a large knife and began to skin the king of beasts. Staines wondered he could so profane that masterpiece of nature. He felt more inclined to thank God for so great a preservation, and then pass reverently on and leave the dead king undesecrated.

He was roused from his solemn thoughts by the reflection that there might be a lioness about, since there were cubs. He took a piece of paper, emptied his remaining powder into it, and proceeded to dry it in the sun. This was soon done, and then he loaded both barrels.

By this time the adroit Hottentot had flayed the carcass sufficiently to reveal the mortal injury. The projectile had entered the chest, and, slanting upward, had burst among the vitals, reducing them to a gory pulp. The lion must have died in the air, when he bounded on receiving the fatal shot.

The Hottentot uttered a cry of admiration. "Not the lion king of all, nor even the white man," he said, "but Enfeel rifle!"

Staines's eyes glittered. "You shall have it and the horse for your diamond," said he, eagerly.

The black seemed a little shaken, but did not reply. He got out of it by going on with his lion; and Staines eyed him, and was bitterly disappointed at not getting the diamond even on these terms. He began to feel he should never get it. They were near the high-road; he could not keep the Hottentot to himself much longer. He felt sick at heart. He had wild and wicked thoughts; half hoped the lioness would come and kill the Hottentot, and liberate the jewel that possessed his soul.

At last the skin was off, and the Hottentot said, "Me take this to my kraal, and dey all say, 'Squat a great shooter; kill um lion.'"

Then Staines saw another chance for him, and summoned all his address for a last effort. "No, Squat," said he, "that skin belongs to me. I shot the lion, with the only rifle that can kill a lion like a cat. Yet you would not give me a diamond—a paltry stone for it. No, Squat, if you were to go into your village with that lion's skin, why, the old men would bend their heads to you, and say, 'Great is Squat! He killed the lion, and wears his skin.' The young women would all fight which should be the wife of Squat. Squat would be king of the village."

Squat's eyes began to roll.

"And shall I give the skin and the glory that is my due to an ill-natured fellow who refuses me his paltry diamond for a good horse—look at him; and for the rifle that kills lions like rabbits—behold it; and a hundred pounds in good gold and Dutch notes—see; and for the lion's skin and glory and honor and a rich wife, and to be king of Africa? Never."

The Hottentot's hands and toes began to work convulsively. "Good master, Squat ask pardon. Squat was blind. Squat will give the diamond, the great diamond of Africa, for the lion's skin, and the king rifle, and the little horse, and the gold, and Dutch notes every one of them. Dat make just two hundred pounds."

"More like four hundred," cried Staines, very loud. "And how do I know it is a diamond? These large stones are the most deceitful. Show it me this instant," said he, imperiously.

"Iss, master," said the crushed Hottentot, with the voice of a mouse, and put the stone into his hand with a child-like faith that almost melted Staines; but he saw he must be firm. "Where did you find it?" he bawled.

"Master," said poor Squat, in deprecating tones, "my little master at the farm wanted plaster. He send to Bulteel's pan; dere was large lumps. Squat say to miners, 'May we

take de large lumps?' Dey say, 'Yes; take de cursed lumps we no can break.' We took de cursed lumps. We ride 'em in de cart to farm, twenty milses. I beat 'em with my hammer. Dey is very hard. More dey break my heart dan I break deir cursed heads. One day I use strong words, like white man, and I hit one large lump too hard; he break, and out come de white clear stone. Iss, him diamond. Long time we know him in our kraal, because he hard. Long time before ever white man know him, tousand years ago, we find him, and he make us lilly hole in big stone for make wheat dust. Him a diamond, blank my eyes!"

This was intended as a solemn form of asseveration adapted to the white man's habits.

Yes, reader, he told the truth; and, strange to say, the miners knew the largest stones were in those great lumps of carbonate, but then the lumps were so cruelly hard, they lost all patience with them, and so, finding it was no use to break some of them and not all, they rejected them all, with curses; and thus this great stone was carted away as rubbish from the mine, and found, like a toad in a hole, by Squat.

"Well," said Christopher, "after all, you are an honest fellow, and I think I will buy it; but first you must show me out of this wood; I am not going to be eaten alive in it for want of the king of rifles."

Squat assented eagerly, and they started at once. They passed the skeleton of the eland; its very bones were polished, and its head carried into the wood; and looking back, they saw vultures busy on the lion. They soon cleared the wood.

Squat handed Staines the diamond—when it touched his hand as his own a bolt of ice seemed to run down his back, and hot water to follow it—and the money, horse, rifle, and skin were made over to Squat.

"Shake hands over it, Squat," said Staines; "you are hard, but you are honest."

"Iss, master, I a good much hard and honest," said Squat.

"Good-by, old fellow."

"Good-by, master."

And Squat strutted away, with the halter in his hand, horse following him, rifle under his arm, and the lion's skin over his shoulders, and the tail trailing, a figure sublime in his own eyes, ridiculous in creation's. So vanity triumphed even in the wilds of Africa.

Staines hurried forward on foot, loading his revolver as he went, for the very vicinity of the wood alarmed him now he had parted with his trusty rifle.

That night he lay down on the open veldt, in his jackal's skin, with no weapon but his revolver, and woke with a start a dozen times. Just before daybreak he scanned the stars carefully, and, noting exactly where the sun rose, made a rough guess at his course, and followed it till the sun was too hot; then he crept under a ragged bush, hung up his jackal's skin, and sweated there, parched with thirst, and gnawed with hunger. When it was cooler, he crept on, and found water, but no food. He was in torture, and began to be frightened, for he was in a desert. He found an ostrich egg, and ate it ravenously.

Next day hunger took a new form, faintness. He could not walk for it; his jackal's skin oppressed him; he lay down, exhausted. A horror seized his dejected soul. The diamond! It would be his death. No man must so long for any earthly thing as he had for this glittering traitor. "Oh, my good horse! my trusty rifle!" he cried. "For what have I thrown you away? For starvation. Misers have been found stretched over their gold; and some day my skeleton will be found, and nothing to tell the base death I died of, and deserved; nothing but the cursed diamond. Ay, fiend! glare in my eyes, do!" He felt delirium creeping over him; and, at that, a new terror froze him. His reason, that he had lost once, was he to lose it again? He prayed, he wept, he dozed, and forgot all. When he woke again a cool air was fanning his cheeks; it revived him a little; it became almost a breeze.

And this breeze, as it happened, carried on its wings the curse of Africa. There loomed in the northwest a cloud of singular density, that seemed to expand in size as it drew nearer, yet to be still more solid, and darken the air. It seemed a dust-storm. Staines took out his handkerchief, prepared to wrap his face in it, not to be stifled.

But soon there was a whirring and a whizzing, and hundreds of locusts flew over his head; they were followed by thousands, the swiftest of the mighty host. They thickened and thickened, till the air looked solid, and even that glaring sun was blackened by the rushing mass. Birds of all sorts whirled above, and swooped among them: they peppered Staines all over like shot. They stuck in his beard, and all over him; they clogged the bushes, carpeted the ground, while the darkened air sang as with the whirl of machinery. Every bird in the air, and beast of the field, granivorous or carnivorous, was gorged with them, and to these animals was added man, for Staines, being famished, and remembering the vrow Bulteel, lighted a fire, and roasted a handful or two on a flat stone; they were delicious. The fire once lighted, they cooked themselves, for they kept flying into it. Three hours, without interruption, did they darken nature, and before the column ceased all the beasts of the field came after, gorging them so recklessly that Staines could have shot an antelope dead with his pistol within a yard of him.

But, to tell the horrible truth, the cooked locusts were so nice that he preferred to gorge on them along with the other animals.

He roasted another lot for future use, and marched on with a good heart.

But now he got on some rough, scrubby ground, and damaged his shoes and tore his trowsers.

This lasted a terrible distance; but at the end of it came the usual arid ground; and at last he came upon the track of wheels and hoofs. He struck it at an acute angle, and that showed him he had made a good line. He limped along it a little way, slowly, being foot-sore.

By-and-by, looking back, he saw a lot of rough fellows swaggering along behind him. Then he was alarmed, terribly alarmed, for his diamond; he tore a strip off his handkerchief, and tied it cunningly under his armpit as he hobbled on.

The men came up with him.

"Hallo, mate! Come from the diggings?"

"Yes."

"What luck?"

"Very good."

"Haw! haw! What, found a fifty carat? Show it us."

"We found five big stones, my mate and me. He is gone to Cape Town to sell them. I had no luck when he left me, so I have cut it; going to turn farmer. Can you tell me how far it is to Dale's Kloof?"

No, they could not tell him that. They swung on; and, to Staines, their backs were a cordial, as we say in Scotland.

However, his travels were near an end. Next morning he saw Dale's Kloof in the distance; and, as soon as the heat moderated, he pushed on, with one shoe and tattered trowsers; and half an hour before sunset he hobbled up to the place.

It was all bustle. Travelers at the door; their wagons and carts under a long shed.

Ucatella was the first to see him coming, and came and fawned on him with delight. Her eyes glistened, her teeth gleamed. She patted both his cheeks, and then his shoulders, and even his knees, and then flew indoors crying, "My doctor child is come home!" This amused three travelers, and brought out Dick with a hearty welcome.

"But Lordsake, Sir, why have you come afoot; and a rough road too? Look at your shoes. Hallo! What is come of the horse?"

"I exchanged him for a diamond."

"The deuce you did! And the rifle?"

"Exchanged that for the same diamond."

"It ought to be a big un."

"It is."

Dick made a wry face. "Well, Sir, you know best. You are welcome, on horse or afoot. You are just in time; Phœbe and me are just sitting down to dinner."

He took him into a little room they had built for their own privacy, for they liked to be quiet now and then, being country bred; and Phœbe was putting their dinner on the table when Staines limped in.

She gave a joyful cry, and turned red all over. "Oh, doctor!" Then his travel-torn appearance struck her. "But, dear heart! what a figure! Where's Reginald? Oh, he's not far off, *I* know."

And she flung open the window, and almost flew through it in a moment, to look for her husband.

"Reginald?" said Staines. Then, turning to Dick Dale, "Why, he is here—isn't he?"

"No, Sir: not without he is just come with you."

"With me?—no. You know, we parted at the diggings. Come, Mr. Dale, he may not be here now; but he has been here. He must have been here."

Phœbe, who had not lost a word, turned round, with all her high color gone, and her cheeks getting paler and paler. "Oh, Dick! what is this?"

"I don't understand it," said Dick. "What ever made you think he was here, Sir?"

"Why, I tell you he left me to come here."

"Left you, Sir!" faltered Phœbe. "Why, when?—where?"

"At the diggings—ever so long ago."

"Blank him! that is just like him, the uneasy fool!" roared Dick.

"No, Mr. Dale, you should not say that: he left me, with my consent, to come to Mrs. Falcon here, and consult her about disposing of our diamonds."

"Diamonds!—diamonds!" cried Phœbe. "Oh, they make me tremble. How *could* you let him go alone? You didn't let *him* go on foot, I hope?"

"Oh no, Mrs. Falcon; he had his horse and his rifle, and money to spend on the road."

"How long ago did he leave you, Sir?"

"I—I am sorry to say it was five weeks ago."

"Five weeks! and not come yet. Ah! the wild beasts!—the diggers!—the murderers! He is dead!"

"God forbid!" faltered Staines; but his own blood began to run cold.

"He is dead. He has died between this and the dreadful diamonds. I shall never see my darling again: he is dead. He is dead."

She rushed out of the room, and out of the house, throwing her arms above her head in despair, and uttering those words of agony again and again in every variety of anguish.

At such horrible moments women always swoon—if we are to believe the dramatists. I doubt if there is one grain of truth in this. Women seldom swoon at all, unless their bodies are unhealthy, or weakened by the reaction that follows so terrible a shock as this. At all events, Phœbe, at first, was strong and wild as a lion, and went to and

fro outside the house, unconscious of her body's motion, frenzied with agony, and but one word on her lips, "He is dead!—he is dead!"

Dick followed her, crying like a child, but master of himself; he got his people about her, and half carried her in again; then shut the door in all their faces.

He got the poor creature to sit down, and she began to rock and moan, with her apron over her head, and her brown hair loose about her.

"Why should he be dead?" said Dick. "Don't give a man up like that, Phœbe. Doctor, tell us more about it. Oh, man, how could you let him out of your sight? You knew how fond the poor creature was of him."

"But that was it, Mr. Dale," said Staines. "I knew his wife must pine for him; and we had found six large diamonds, and a handful of small ones; but the market was glutted; and, to get a better price, he wanted to go straight to Cape Town. But I said, 'No; go and show them to your wife, and see whether she will go to Cape Town.'"

Phœbe began to listen, as was evident by her moaning more softly.

"Might he not have gone straight to Cape Town?" Staines hazarded this timidly.

"Why should he do that, Sir? Dale's Kloof is on the road."

"Only on one road. Mr. Dale, he was well armed, with rifle and revolver; and I cautioned him not to show a diamond on the road. Who would molest him? Diamonds don't show, like gold. Who was to know he had three thousand pounds hidden under his armpits and in two barrels of his revolver?"

"Three thousand pounds!" cried Dale. "You trusted *him* with three thousand pounds?"

"Certainly. They were worth about three thousand pounds in Cape Town, and half as much again in—"

Phœbe started up in a moment. "Thank God!" she cried. "There's hope for me. Oh, Dick, he is not dead: HE HAS ONLY DESERTED ME."

And with these strange and pitiable words, she fell to sobbing, as if her great heart would burst at last.

CHAPTER XXIII.

THERE came a reaction, and Phœbe was prostrated with grief and alarm. Her brother never doubted now that Reginald had run to Cape Town for a lark. But Phœbe, though she thought so too, could not be sure; and so the double agony of bereavement and desertion tortured her by turns and almost together. For the first time these many years she was so crushed she could not go about her business, but lay on a little sofa in her own room, and had the blinds down, for her head ached so she could not bear the light.

She conceived a bitter resentment against Staines, and told Dick never to let him into her sight, if he did not want to be her death.

In vain Dick made excuses for him: she would hear none. For once she was as unreasonable as any other living woman: she could see nothing but that she had been happy, after years of misery, and should be happy now if this man had never entered her house. "Ah, Colly!" she cried, "you were wiser than I was. You as good as told me he would make me smart for lodging and curing him. And I was *so* happy!"

Dale communicated this as delicately as he could to Staines. Christopher was deeply grieved and wounded. He thought it unjust, but he knew it was natural. He said, humbly, "I feel guilty myself, Mr. Dale; and yet, unless I had possessed omniscience, what could I do? I thought of her in all—poor thing! poor thing!"

The tears were in his eyes, and Dick Dale went away scratching his head and thinking it over. The more he thought, the less he was inclined to condemn him.

Staines himself was much troubled in mind, and lived on thorns. He wanted to be off to England, grudged every day, every hour, he spent in Africa. But Mrs. Falcon was his benefactress; he had been for months and months garnering up a heap of gratitude toward her. He had not the heart to leave her bad friends, and in misery. He kept hoping Falcon would return or write.

Two days after his return he was seated, disconsolate, gluing garnets and carbuncles on to a broad tapering bit of lamb-skin, when Ucatella came to him and said, "My doctor child sick?"

"No, not sick; but miserable." And he explained to her, as well as he could, what had passed. "But," said he, "I would not mind the loss of the diamonds now, if I was only sure he was alive. I think most of poor, poor Mrs. Falcon."

While Ucatella pondered this, but with one eye of demure curiosity on the coronet he was making, he told her it was for her—he had not forgot her at the mines. "These stones," said he, "are not valued there; but see how glorious they are!"

In a few minutes he had finished the coronet, and gave it her. She uttered a chuckle of delight, and, with instinctive art, bound it, in a turn of her hand, about her brow; and then Staines himself was struck dumb with amazement. The carbuncles gathered from those mines look like rubies, so full of fire are they, and of enormous size. The chaplet had twelve great carbuncles in the centre, and went off by gradations into smaller garnets by the thousand. They flashed their blood-red flames in the African sun, and the head of Ucatella, grand before, be-

came the head of the Sphinx, encircled with a coronet of fire. She bestowed a look of rapturous gratitude on Staines, and then glided away, like the stately Juno, to admire herself in the nearest glass, like any other coquette, black, brown, yellow, copper, or white.

That very day, toward sunset, she burst upon Staines quite suddenly, with her coronet gleaming on her magnificent head, and her eyes like coals of fire, and under her magnificent arm, hard as a rock, a boy kicking and struggling in vain. She was furiously excited, and, for the first time, showed signs of the savage in the whites of her eyes, which seemed to turn the glorious pupils into semicircles. She clutched Staines by the shoulder with her left hand, and swept along with the pair, like dark Fate, or as potent justice sweeps away a pair of culprits, and carried them to the little window, and cried, "Open! —open!"

Dick Dale was at dinner. Phœbe lying down. Dick got up, rather crossly, and threw open the window. "What is up now?" said he, crossly: he was like two or three more Englishmen—hated to be bothered at dinner-time.

"Dar," screamed Ucatella, setting down Tim, but holding him tight by the shoulder; "now you tell what you see that night, you lilly Kafir trash; if you not tell, I kill you DEAD;" and she showed the whites of her eyes, like a wild beast.

Tim, thoroughly alarmed, quivered out that he had seen lilly master ride up to the gate one bright night, and look in, and Tim thought he was going in; but he changed his mind, and galloped away that way; and the monkey pointed south.

"And why couldn't you tell us this before?" questioned Dick.

"Me mind de sheep," said Tim, apologetically. "Me not mind de lilly master: jackals not eat him."

"You no more sense dan a sheep yourself," said Ucatella, loftily.

"No, no: God bless you both," cried poor Phœbe: "now I know the worst;" and a great burst of tears relieved her suffering heart.

Dick went out softly. When he got outside the door, he drew them all apart, and said, "Yuke, you *are* a good-hearted girl. I'll never forget this while I live; and, Tim, there's a shilling for thee; but don't you go and spend it in Cape smoke; that is poison to whites, and destruction to blacks."

"No, master," said Tim. "I shall buy much bread, and make my tomach tiff;" then, with a glance of reproach at the domestic caterer, Ucatella, "I almost never have my tomach tiff."

Dick left his sister alone an hour or two, to have her cry out.

When he went back to her there was a change: the brave woman no longer lay prostrate. She went about her business; only she was always either crying or drowning her tears.

He brought Doctor Staines in. Phœbe instantly turned her back on him with a shudder there was no mistaking.

"I had better go," said Staines. "Mrs. Falcon will never forgive me."

"She will have to quarrel with me else," said Dick, steadily. "Sit you down, doctor. Honest folk like you and me and Phœbe wasn't made to quarrel for want of looking a thing all round. My sister, she hasn't looked it all round, and I have. Come, Pheeb, 'tis no use your blinding yourself. How was the poor doctor to know your husband is a blackguard?"

"He is not a blackguard. How dare you say that to my face?"

"He is a blackguard, and always was. And now he is a thief to boot. He has stolen those diamonds; you know that very well."

"Gently, Mr. Dale; you forget: they are as much his as mine."

"Well, and if half a sheep is mine, and I take the whole and sell him, and keep the money, what is that but stealing? Why, I wonder at you, Pheeb. You was always honest yourself, and yet you see the doctor robbed by your man, and that does not trouble you. What has he done to deserve it? He has been a good friend to us. He has put us on the road. We did little more than keep the pot boiling before he came—well, yes, we stored grain; but whose advice has turned that grain to gold, I might say? Well, what's his offense? He trusted the diamonds to your man, and sent him to you. Is he the first honest man that has trusted a rogue? How was he to know? Likely he judged the husband by the wife. Answer me one thing, Pheeb. If he makes away with fifteen hundred pounds that is his, or partly yours—for he has eaten your bread ever since I knew him—and fifteen hundred more that is the doctor's, where shall we find fifteen hundred pounds all in a moment to pay the doctor back his own?"

"My honest friend," said Staines, "you are tormenting yourself with shadows. I don't believe Mr. Falcon will wrong me of a shilling; and, if he does, I shall quietly repay myself out of the big diamond. Yes, my dear friends, I did not throw away your horse, nor your rifle, nor your money: I gave them all, and the lion's skin—I gave them all—for this."

And he laid the big diamond on the table.

It was as big as a walnut, and of the purest water.

Dick Dale glanced at it stupidly. Phœbe turned her back on it, with a cry of horror, and then came slowly round by degrees; and her eyes were fascinated by the royal gem.

"Yes," said Staines, sadly, "I had to

strip myself of all to buy it, and when I had got it, how proud I was, and how happy I thought we should all be over it; for it is half yours, half mine. Yes, Mr. Dale, there lies six thousand pounds that belong to Mrs. Falcon."

"Six thousand pounds!" cried Dick.

"I am sure of it. And so, if your suspicions are correct, and poor Falcon should yield to a sudden temptation, and spend all that money, I shall just coolly deduct it from your share of this wonderful stone: so make your mind easy. But no: if Falcon is really so wicked as to desert his happy home, and so mad as to spend thousands in a month or two, let us go and save him."

"That is my business," said Phœbe. "I am going in the mail-cart to-morrow."

"Well, you won't go alone," said Dick.

"Mrs. Falcon," said Staines, imploringly, "let me go with you."

"Thank you, Sir. My brother can take care of me."

"Me! You had better not take me. If I catch hold of him, by —— I'll break his neck, or his back, or his leg, or something: he'll never run away from you again, if I lay hands on him," replied Dick.

"I'll go alone. You are both against me."

"No, Mrs. Falcon. I am not," said Staines. "My heart bleeds for you."

"Don't you demean yourself, praying her," said Dick. "It's a public conveyance: you have no need to ask *her* leave."

"That is true: I can not hinder folk from going to Cape Town the same day," said Phœbe, sullenly.

"If I might presume to advise, I would take little Tommy."

"What! all that road! Do you want me to lose my child as well as my man?"

"Oh! Mrs. Falcon!"

"Don't speak to her, doctor, to get your nose snapped off: give her time. She'll come to her senses before she dies."

Next day Mrs. Falcon and Staines started for Cape Town. Staines paid her every attention, when opportunity offered. But she was sullen and gloomy, and held no converse with him.

He landed her at an inn, and then told her he would go at once to the jeweler's. He asked her piteously would she lend him a pound or two to prosecute his researches. She took out her purse without a word, and lent him two pounds. He began to scour the town. The jewelers he visited could tell him nothing. At last he came to a shop, and there he found Mrs. Falcon making her inquiries independently. She said, coldly, "You had better come with me, and get your money and things."

She took him to the bank—it happened to be the one she did business with—and said, "This is Doctor Christie, come for his money and jewels."

There was some demur at this; but the cashier recognized him, and Phœbe making herself responsible, the money and jewels were handed over.

Staines whispered Phœbe, "Are you sure the jewels are mine?"

"They were found on you, Sir."

Staines took them, looking confused. He did not know what to think. When they got into the street again he told her it was very kind of her to think of his interest at all.

No answer. She was not going to make friends with him over such a trifle as that.

By degrees, however, Christopher's zeal on her behalf broke the ice; and besides, as the search proved unavailing, she needed sympathy; and he gave it her, and did not abuse her husband, as Dick Dale did.

One day, in the street, after a long thought, she said to him, "Didn't you say, Sir, you gave him a letter for me?"

"I gave him two letters; one of them was to you."

"Could you remember what you said in it?"

"Perfectly. I begged you, if you should go to England, to break the truth to my wife. She is very excitable; and sudden joy has killed ere now. I gave you particular instructions."

"And you were very wise. But whatever could make you think I would go to England?"

"He told me you only wanted an excuse."

"Oh!"

"When he told me that, I caught at it, of course. It was all the world to me to get my Rosa told by such a kind, good, sensible friend as you: and, Mrs. Falcon, I had no scruple about troubling you; because I knew the stones would sell for at least a thousand pounds more in England than here, and that would pay your expenses."

"I see, Sir: I see. 'Twas very natural: you love your wife."

"Better than my life."

"And he told you I only wanted an excuse to go to England?"

"He did indeed. It was not true?"

"It was any thing but true. I had suffered so in England: I had been so happy here: too happy to last. Ah! well, it is all over. Let us think of the matter in hand. Sure that was not the only letter you gave my husband? Didn't you write to *her*?"

"Of course I did; but that was inclosed to you, and not to be given to her until you had broken the joyful news to her. Yes, Mrs. Falcon, I wrote and told her every thing: my loss at sea; how I was saved, after, by your kindness. Our journeys—from Cape Town—and then to the diggings, my sudden good fortune—my hopes—my joy—oh, my poor Rosa! and now I suppose she will never get it. It is too cruel of him. I shall go home by the next steamer. I *can't*

stay here any longer, for you or any body. Oh, and I inclosed my ruby ring, that she gave me, for I thought she might not believe you without that."

"Let me think," said Phœbe, turning ashy pale. "For mercy's sake, let me think."

"He has read both those letters, Sir."

"She will never see hers; any more than I shall see mine."

She paused again, thinking harder and harder.

"We must take two places in the next mail steamer. I must look after my husband; AND YOU AFTER YOUR WIFE."

HAWAII-NEI.*

By CHARLES NORDHOFF.

I.—HONOLULU AND HILO, WITH SOME CRATERS.

THE Hawaiian or Sandwich Islands were discovered—or rediscovered, as some say—by Captain Cook, in January, 1778, a year and a half after our Declaration of Independence. The inhabitants were then what we call savages—that is to say, they wore no more clothing than the climate made necessary, and knew nothing of the Christian religion. In the period between 1861 and 1865 this group had in the Union armies a brigadier-general, a major, several other officers, and more than one hundred private soldiers and seamen, and its people contributed to the treasury of the Sanitary Commission a sum larger than that given by most of our own States.

In 1820 the first missionaries landed on the shores of these islands, and Mrs. Lucy G. Thurston, one of those who came in that year, still lives, a bright, active old lady, with a shrewd wit of her own. Thirty-three years afterward, in 1853, the American Board of Missions determined that "the Sandwich Islands, having been Christianized, shall no longer receive aid from the board;" and in this year, 1873, the natives of these islands are, there is reason to believe, the most generally educated people in the world. There is scarcely a Hawaiian, man, woman, or child of suitable age, but can both read and write. All the towns and many country localities possess substantial stone or, more often, framed churches, of the oddest New England pattern; and a compulsory education law draws every child into the schools, while a special tax of two dollars on every voter, and an additional general tax, provide schools and teachers for all the children and youth.

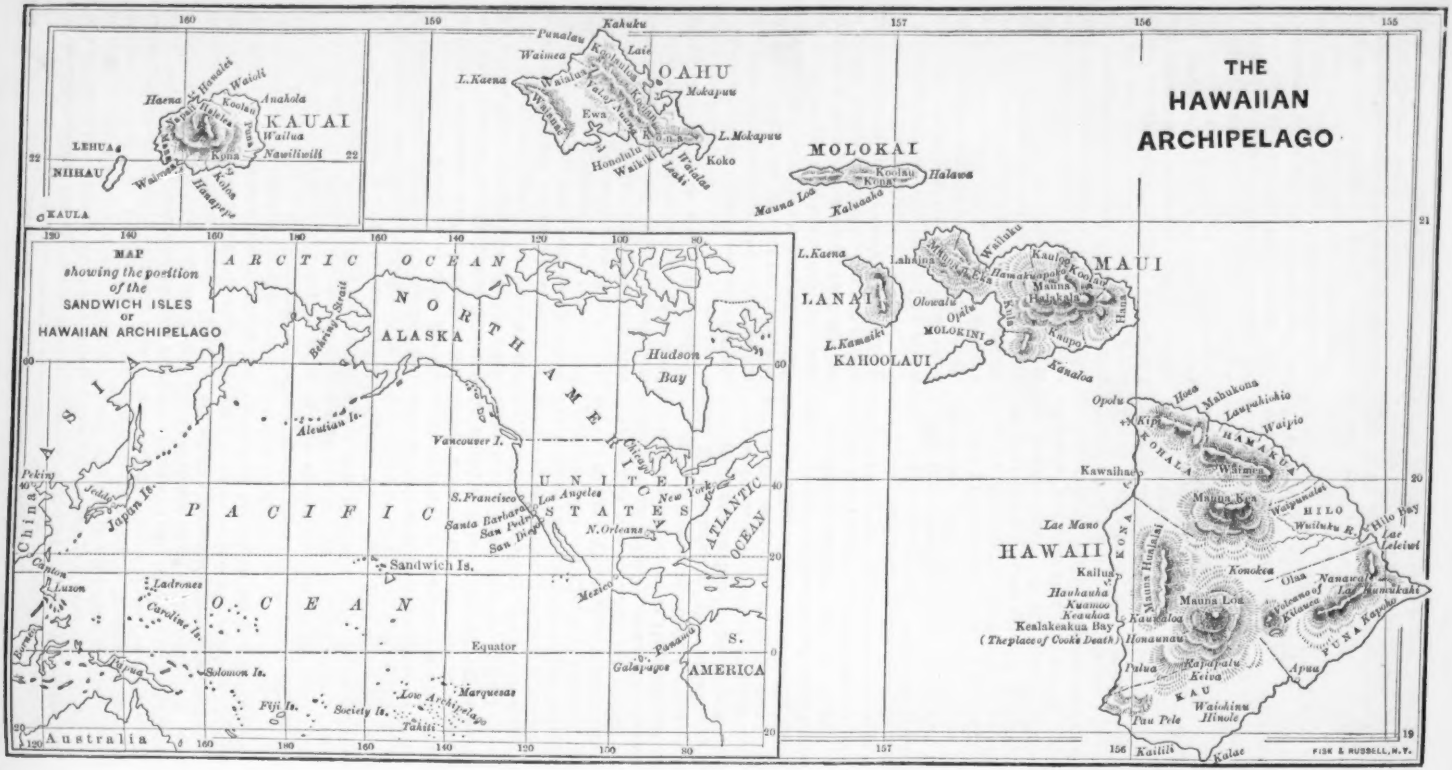
Nine hundred and three thousand dollars were given by Christian people in the United States during thirty-five years to accomplish this result; and to-day the islands themselves support a missionary society, which sends the Gospel, in the hands of native missionaries, into other islands at its own cost, and not only supports more than a dozen "foreign" missionaries, but translates parts of the Bible into other Polynesian tongues.

The Hawaiian group consists, as you will see on the map, of eleven islands, of which Hawaii is the largest and Molokini the smallest. The islands together contain about 6000 square miles; and of this Hawaii has an area of nearly 4000 square miles, Maui 620, Oahu (which contains Honolulu, the capital) 530, and Kauai 500. Lanai, Kahoolani, Molokai, Niihau, Kaula, Lehua, and Molokini are small islands. All are of volcanic origin, mountainous, and Hawaii contains the largest active crater in the world, Kilauea, one of the craters of Mauna Loa; while Maui contains the largest known extinct crater, Halakala, the House of the Sun, a pit nine miles in diameter and two thousand feet deep. Mauna Loa and Mauna Kea are nearly 14,000 feet high, as high as Mount Grey, in Colorado; and you can not ride any where in the islands without seeing extinct craters, of which the hill called Diamond Head, near Honolulu, is an example.

The voyage from San Francisco to Honolulu lasts from eight to ten days, and is, even to persons subject to seasickness, very enjoyable, because after the second day the weather is charmingly warm, the breezes usually mild, and the skies sunny and clear. In forty-eight hours after you leave the Golden Gate, shawls, overcoats, and wraps are discarded. You put on thinner clothing. After breakfast you will like to spread rugs on deck and lie in the sun, fanned by deliciously soft winds, and before you see Honolulu you will even like to have an awning spread over you to keep off the sun. When they seek a tropical climate, our brethren on the Pacific coast have no such rough voyage as that across the Atlantic to endure. On the bay you see flying-fish, and if you are lucky, an occasional whale or a school of porpoises. And you sail over the lovely blue of the Pacific Ocean, which has not only softer gales but even a different shade of color than the fierce Atlantic.

We made the land at daylight on the tenth day of the voyage, and by breakfast-time were steaming through the Molokai Channel, with the high, rugged, and bare volcanic cliffs of Oahu close aboard, the

* This is the title of the collective kingdom of Hawaii.


THE
HAWAIIAN
ARCHIPELAGO
MAP
showing the position
of the
SANDWICH ISLES
or
HAWAIIAN ARCHIPELAGO
KAUAI
OAHU
MOLOKAI
LANAI
MAUI
KAHOOLAUI
HAWAII
NIIHAU
KAULA
LEHUA
Honolulu
Waikiki
Koko
Mokapuu
Halawa
Kaluaaha
Mauna Loa
Kealakekua Bay
(The place of Cook's Death)
Kailua
Hilo
Hilo Bay
Kawaihae
Lahaina
Wailuku
Kaupo
Kanaloa
Olowalu
Honuaula
Kohala
Hamakua
Kona
Puna
Kau
Apua
Kalae
Kaiilii
Tau Pele
Waiohinu
Hinole
Kaluaiki
Kalualoa
Honaunau
Kaawaloa
Volcano of Kilauea
Mauna Kea
Waimea
Waipio
Laupahoehoe
Mahukona
Opolu
Hoea
Kipahulu
Kaiwa
Kaalualu
Waiohinu
Kaapuna
Kaawaloa
Kaawaloa
Kaawaloa

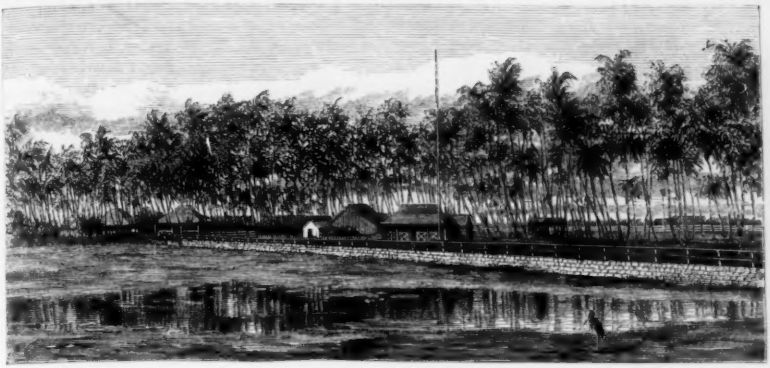
surf beating against the shore vehemently. An hour later we rounded Diamond Head, and sailing past Waikiki, which is the Long Branch of Honolulu, charmingly placed amidst groves of cocoa-nut trees, turned sharp about, and steamed through a narrow channel into the landlocked little harbor of Honolulu, smooth as a mill-pond. It is not until you are almost within the harbor that you get a fair view of the city, which lies embowered in palms and fine tamarind-trees, with the tall fronds of the banana peering above the low-roofed houses; and thus the tropics come, after all, somewhat suddenly upon you, for the land which you have skirted all the morning is by no means tropical in appearance, and the cocoa-nut groves of Waikiki will disappoint you on the first and too distant view, which gives them the insignificant appearance of tall reeds. But your first view of Honolulu, that from the ship's deck, is one of the pleasantest you can get: it is a view of gray house-tops, hidden in luxuriant green, with a background of volcanic mountains three or four thousand feet high, and an immediate foreground of smooth harbor, gay with man-of-war boats, native canoes, and flags, and the wharf, with ladies in carriages, and native fruit-vendors in what will seem to you brightly colored night-gowns, ready to sell you a feast of bananas and oranges.

There are several other fine views of Honolulu, especially that from the lovely Nuanu Valley, looking seaward over the town, and one from the roof of the prison, which edifice, clean, roomy, and, in the daytime, empty, because the convicts are sent out to labor on public works and roads, has one of the finest situations in the town's limits, directly facing the Nuanu Valley.

From the steamer you proceed to a surprisingly excellent hotel, which was built (at a cost of about $120,000), and is owned, by the government. It is, as you will see (page 393), a large building, and affords all the conveniences of a first-class hotel in any part of the world. It is built of a concrete stone made here, and as it has roomy, well-shaded court-yards and deep, cool piazzas, and breezy halls and good rooms, and baths and gas, and a billiard-room, you might imagine yourself in San Francisco, were it not that you drive in under the shade of cocoa-nut, tamarind, guava, and algeroba trees, and find all the doors and windows open. It is told here that the building of this hotel cost two of the late king's cabinet, Mr. Harris and Dr. Smith, their places. The Hawaiian people are economical, and not very enterprising; they dislike debt, and a considerable part of the Hawaiian national debt was contracted to build this hotel. You will feel sorry for Messrs. Harris and Smith, who were for many years two of the ablest members of the Hawaiian cabinet, but you will feel grateful for their enterprise also, when you hear that before this hotel was completed—that is to say, until last year—a stranger landing in Honolulu had either to throw himself on the hospitality of the citizens, take his lodgings in the Sailors' Home, or go back to his ship. It is not often that cabinet ministers fall in so good a cause, or incur the public displeasure for an act which adds so much to the comfort of mankind.

The mercury stands between 68° and 81° in the winter months in Honolulu. The mornings are often a little overcast until about half past nine, when it clears away bright. The hottest part of the day is before noon. The trade-wind usually blows, and when it does it is always cool; with a south wind, it is sometimes a little sultry before noon. The nights are cool enough for sound rest, but not cold. It is not by any means a torrid climate, at least in winter, and it has, perhaps, the fewest daily extremes of any pleasant climate in the world. For instance, the mercury ranged in January between 69° at 7 A.M., 75½° at 2 P.M., and 71½° at 10 P.M. The highest temperature in that month was 78°, and the lowest 68°. December and January are usually the coolest months in the year at Honolulu, but the variation is extremely slight for the whole year, the maximum of the warmest day in July (still at Honolulu) being only 86°, and this at noon, and the lowest mark being 62°, in the early morning in December. A friend of mine resident here during twenty years has never had a blanket in his house.

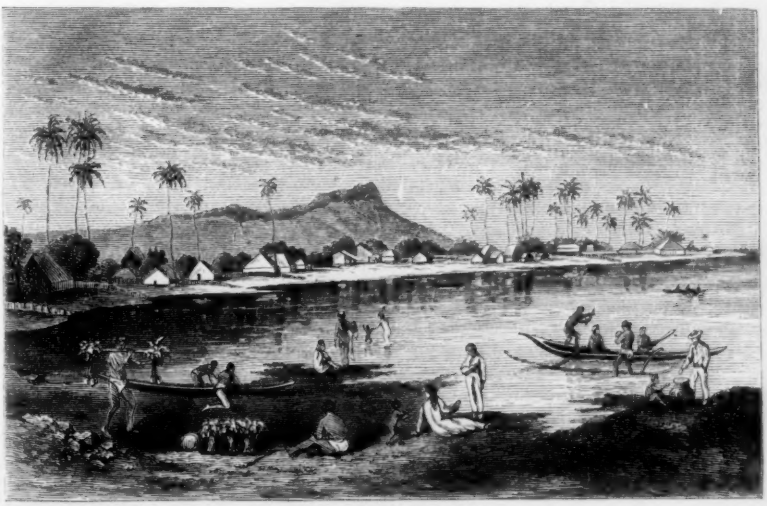
It follows naturally that the climate is an excellent one for consumptives, and physicians here point to numerous instances of the kindly and healing effect of the mild air. At the same time I suspect it must in the long-run be a little debilitating to Americans. It is a charming climate for children; and as sea-bathing is possible and pleasant at all times, those who derive benefit from this may here enjoy it to the fullest extent during all the winter months. Of course you wear thin, but not the thinnest, clothing. White is appropriate to the climate; but summer flannels are comfortable in winter here. The air is seldom as sultry as in New York in July or August, and the heat is by no means oppressive, there being almost always a fresh breeze. Honolulu has the reputation of being the hottest place on the islands; and in a mountainous country like this you may choose your temperature, of course. The summits of the highest peaks on Hawaii are covered with almost perpetual snow; and there are sugar planters who might sit around a fire every night in the year. Unlike California, there is no special rainy season here; but those points which are most directly exposed to the trade-winds have a great deal of rain,



COCOA-NUT GROVE, AND RESIDENCE OF THE LATE KING KAMEHAMEHA V., AT WAIKIKI, HONOLULU.

and those which lie away from the trades have but little. At Hilo it sometimes rains for a month at a time; at Lahaina it hardly ever rains; and Honolulu is a pleasant place for travelers to stay in, because it also has but little rain. It rains more or less in every month in the year, all over the islands; and you can not therefore count certainly on a fair day, as in the dry season in California, though the residents know how to forecast the weather. It results that the grass remains green, except in the dry districts, all the year round, and the lawn grass here is the creeping Bermuda grass, which has lately been introduced in our Southern States, and which has a fine deep green color, and covers the ground admirably, making most beautiful lawns. Strawberries, too, you may eat in every month of the year; in the month of February we have them at every meal, and as they have an ice factory in Honolulu, we eat strawberries and ice-cream as though it were June or July at home.

One of the pleasant surprises which meet a Northern traveler in these islands is the number of strange dishes which appear on the table and in the bill of fare. Strawberries, oranges—the sweetest and juiciest I have eaten any where, except, perhaps, in Rio de Janeiro—bananas, and cocoa-nuts you have at will; but, besides these, there is at this season the guava, very nice when it is sliced like a tomato, and eaten with sugar and milk; taro, which is the potato of the country, and, in the shape of poi, the main subsistence of the native Hawaiian; bread-fruit; flying-fish, the most tender and succulent of the fish kind; and, in their sea-



DIAMOND HEAD AND WAIKIKI.

THE PALACE, HONOLULU.

son, the mango, the custard-apple, the alligator-pear, the water-lemon, the rose-apple, and other fruits. Taro, when baked, is an excellent and wholesome vegetable, and from its leaves is cooked a fine substitute for spinach, called *luau*. Poi also appears on your hotel table, being the national dish, of which many foreigners have become very fond. It is very fattening, and is sometimes prescribed by physicians to consumptives. As you drive about the suburbs of Honolulu you will see numerous taro patches, and may frequently see the natives engaged in the preparation of poi, which consists in boiling the root, or tuber, and then mashing it very fine, so that if dry it would be a flour. It is then mixed with water, and for native use left to undergo a slight fermentation. Fresh or unfermented poi has a pleasant taste; when fermented it tastes to me like book-binder's paste, and a liking for it must be acquired rather than natural, I should say, with foreigners.

So universal is its use among the natives that the manufacture of poi is carried on now by steam-power and with Yankee machinery for the sugar planters; and the late king, who was avaricious and a trader, incurred the dislike of his native subjects by establishing a poi factory of his own near Honolulu. Poi is sold in the streets in calabashes, but it is also shipped in considerable quantities to other islands, and especially to guano islands which lie southward and westward of this group. On these lonely islets, many of which have not even drinking-water for the laborers who live on them, poi and fish are the chief if not the only articles of food. The fish, of course, are caught on the spot, but poi, water, salt, and a few beef cattle for the use of white superintendents are carried from here.

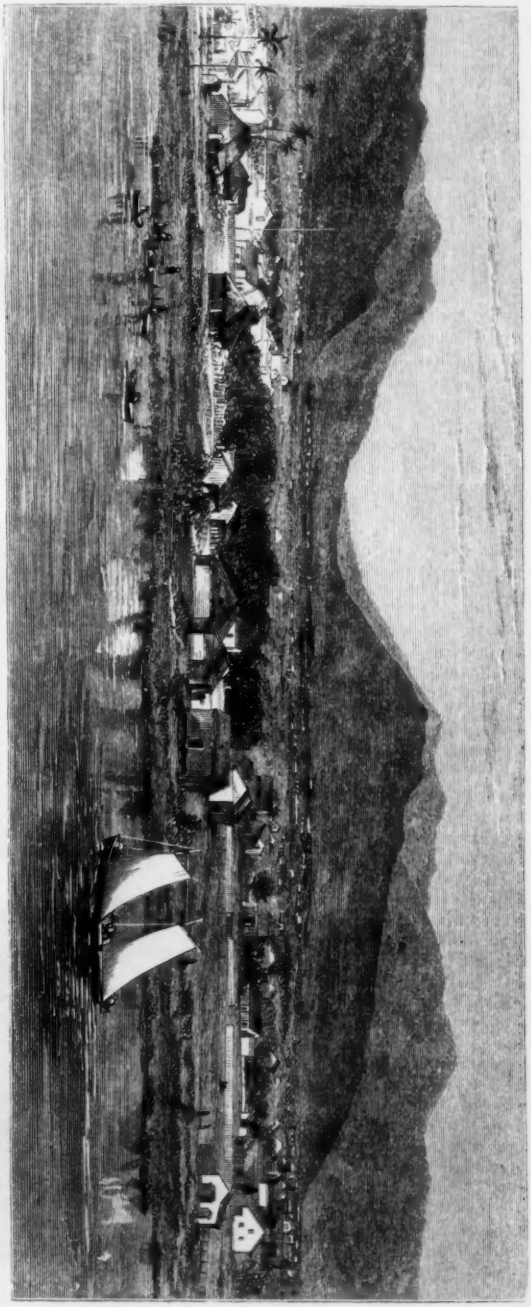
Taro is a kind of *arum*. It grows, unlike any other vegetable I know of, unless it be rice, entirely under water. A taro patch is surrounded by embankments; its bottom is of puddled clay, and in this the cutting, which is simply the top of the plant with a little of the tuber, is set. The plants are set out in little clumps in long rows, and a man at work in a taro patch stands up to his knees in water. Forty square feet of taro, it is estimated, will support a person for a year, and a square mile of taro will feed over 15,000 Hawaiians.

By-the-way, you will hear the natives say *kalo* when they speak of taro, and by this and other words in common use you will presently learn of a curious obliquity in their hearing. A Hawaiian does not notice any difference in the sounds of *r* and *l*, of *k* and *t*, or of *b*, *p*, and *f*. Thus the Pali, or precipice near Honolulu, is spoken of as the Pari; the island of Kauai becomes to a resident of it Tauwai, though a native of Oahu calls it Kauai; taro is almost universally called *kalo;* and the common salutation, *Aloha*, which means "love to you," and is the national substitute for "How do

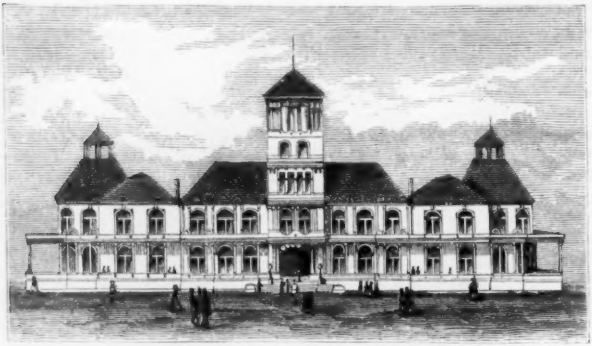
COURT-HOUSE, HONOLULU.

you do?" is half the time *Aroha;* Lanai is indifferently called Ranai; and Mauna Loa is in the mouths of most Hawaiians Mauna Roa. Indeed, in the older charts the capital of the kingdom is called Honoruru.

Honolulu, being the capital of this kingdom, contains the government offices; and you will perhaps be surprised, as I was, to find an excellent public hospital, a reform school, and other proper and well-managed charities. When you have visited these and some of the numerous schools and the native churches, and have driven or ridden to Waikiki for a seabath, and have seen the Nuanu Valley and the precipice called the Pali, if you are American, and familiar with New England, it will be revealed to you that the reason why all the country looks so familiar to you is that it is really a very accurate reproduction of New England country scenery. The white frame houses with green blinds, the picket-fences whitewashed until they shine, the stone walls, the small barns, the scanty pastures, the little white frame churches scattered about, the narrow "front-yards," the frequent school-houses, usually with but little shade, all are New England, genuine and unadulterated; and you have only to eliminate the palms, the bananas, and other tropical vegetation to have before you a fine bit of Vermont, or the stonier parts of Massachusetts. The whole scene has no more breadth nor freedom about it than a petty New England village, but it is just as neat, trim, orderly, and silent also. There is even the same propensi-



HONOLULU, GENERAL VIEW.



GOVERNMENT BUILDINGS, HONOLULU.

about the suburbs of Honolulu, and later as you travel about the islands, more and more you will be impressed with a feeling of respect and admiration for the missionaries. Whatever of material prosperity has grown up here is built on their work, and could not have existed but for their preceding labors; and you see in the spirit of the people, in their often quaint habits, in their universal education, in all that makes these islands peculiar and what they are, the marks of the Puritans who came here but fifty years ago to civilize a savage nation, and have done their work so thoroughly that even though the Hawaiian people became extinct, it would

ty to put all the household affairs under one roof which was born of a severe climate in Massachusetts, but has been brought over to these milder suns by the incorrigible Puritans who founded this bit of civilization.

In fact, the missionaries have left an indelible mark upon these islands. You do not need to look deep to know that they were men of force, men of the same kind as they who have left an equally deep impress upon so large a part of our Western States; men and women who had formed their own lives according to certain fixed and immutable rules, who knew no better country than New England, nor any better ways than New England ways, and to whom it never occurred to think that what was good and sufficient in Massachusetts was not equally good and fit in any part of the world. Patiently, and somewhat vigorously, no doubt, they sought from the beginning to make New England men and women of these Hawaiians, and what is wonderful is that, to a large extent, they have succeeded. As you ride

MRS. LUCY G. THURSTON.

DR. JUDD.

require a century to obliterate the waymarks of that handful of determined New England men and women.

Of those who began this good work but few now remain. Most of them have gone to their reward, having no doubt suffered as well as accomplished much. Of the first band who came out from the United States the only one now living is Mrs. Lucy G. Thurston, whose portrait you will find on the preceding page—a bright, active, and lively old lady of seventy-five years, who drives herself to church on Sundays in a one-horse chaise, and has her own opinions of passing events. How she has lived in the tropics for fifty years without losing even an atom of the New England look puzzles you; but it shows you also the strength which these people brought with them, the tenacity with which they clung to their habits of dress and living and thought, the remorseless determination which they imported, with their other effects, around Cape Horn.

Then there is Dr. Judd, who came out as physician to the mission, and proved himself here, as the world knows, a very able man, with statesmanship for some great emergencies, which made him for years one of the chief advisers of the Hawaiian kings. Dr. Judd has lately suffered a slight stroke of paralysis, from which he is slowly recovering; and it was to me a most touching sight to see, on a Sunday after church, Mrs. Thurston, his senior by many years, but still alert and vigorous, taking hold of his hand, and tenderly helping him out of the church and to his carriage.

And in Hilo, when you go to visit the volcano, you will find Dr. Coan, one of the brightest and loveliest spirits of them all, the story of whose life in the remote island whose apostle he was is as wonderful and as touching as that of any of the earlier apostles, and shows what great works unyielding faith and love can do in redeeming a savage people. When Dr. and Mrs. Coan came to the island of Hawaii its shores and woods were populous, and through their labors thousands of men and women were instructed in the truths of Christianity, inducted into civilized habits of life, and finally brought into the church. As you sail along the green coast of Hawaii from its northern point to Hilo, you will be surprised at the number of quaint little white churches which mark the distances almost with the regularity of mile-stones; if, later, you ride through this district or the one south of Hilo, you will see that for every church there is also a school-house; you will see native children reading and writing as well as our own at home; you may hear them singing tunes familiar in our own Sunday-schools; you will see the native man and woman sitting down to read their newspaper at the close of day; and if you could talk with them you would find they knew almost as much about our late war as you do, for they took an intense interest in the war of the rebellion. And you must remember that when, less than forty years ago, Dr. and Mrs. Coan came to Hilo, the people were naked savages, with no church and but one school-house in the district, without printed books or knowledge of reading. They flocked to hear the Gospel. Thousands removed from a distance to Hilo, where, in their rapid way, they built up a large town, and kept up surely the strangest "protracted meeting" ever held; and going back to their homes after many months, they took with them knowledge and zeal to build up

REV. DR. T. M. COAN.

BETHEL CHURCH.

Christian churches and schools of their own. Over these Dr. Coan has presided these many years, not only preaching regularly on Sundays and during the week in the large native church at Hilo, and in two or three neighboring churches, but visiting the more distant churches at intervals, to examine and instruct the members, and keep them all on the right track. He has seen a region very populous when he first came to it decrease until it has now many more deserted and ruined house places than inhabited dwellings; but also he has seen a great population turned from darkness to light, a great part of it following his own blameless and loving life as an example, and very many living to old age steadfast and zealous Christians.

On your first Sunday at Honolulu you will probably attend one or other of the native churches. They are commodious buildings, well furnished; and a good organ, well played, will surprise you. Sunday is a very quiet day in the islands: they are a church-going people; and the empty seats in the Honolulu native churches give you notice of the great decrease in the population since these were built.

If you go to hear preaching in your own language, it will probably be to the seamen's chapel, where the Rev. Dr. Damon preaches—one of the oldest and one of the best-known residents of Honolulu. This little chapel was brought around Cape Horn in a whale-ship many years ago in pieces, and was, I believe, the first American church set up in these islands. It is a curious old relic, and has seen many changes. Mr. Damon has lived here many years of a most zealous and useful life as seamen's chaplain. He is, in his own field, a true and

KAWAIAHO CHURCH—FIRST NATIVE CHURCH IN HONOLULU.

DR. DAMON.

untiring missionary, and to his care the port owes a clean and roomy seamen's home, a valuable little paper, *The Friend*, which was for many years the chief reading of the whalemen who formerly crowded the ports of Hawaii, and help in distress, and fatherly advice, and unceasing kindness at all times to a multitude of seamen during nearly thirty years. The sailors, who quickly recognize a genuine man, have dubbed him "Father Damon;" and he deserves what he has long had, their confidence and affection.

The charitable and penal institutions of Honolulu are quickly seen, and deserve a visit. They show the care with which the government has looked after the welfare of the people. The Queen's Hospital is an admirably kept house. At the reform school you will see a number of boys trained and educated in right ways. The prison not only deserves a visit for itself, but from its roof you obtain, as I said before, one of the best views of Honolulu and the adjacent country and ocean. Then there are native schools, elementary and academic, where you will see the young Hawaiian at his studies, and learn to appreciate the industry and thoroughness with which education is carried on all over these islands. You will see also curious evidence of the mixture of races here; for on the benches sit, and in the classes recite, Hawaiian, Chinese, Portuguese, half white and half Chinese children; and the little pigtailed Celestial reads out of his primer quite as well as any.

In the girls' schools you will see an occasional pretty face, but fewer than I expected to see; and to my notion the Hawaiian girl is rarely very attractive. Among the middle-aged women, however, you often meet with fine heads and large expressive features. The women have not unfrequently a majesty of carriage and a tragic intensity of features and expression which are quite remarkable. Their loose dress gives grace as well as dignity to their movements; and whoever invented it for them deserves more credit than he has received. It is a little startling at first to see women walking about in what, to our perverted tastes, look like calico or black stuff night-gowns; but the dress grows on you as you become accustomed to it; it lends itself readily to bright ornamentation; it is eminently fit for the climate; and a stately Hawaiian dame, marching through the street, in black *holaku*—as the dress is called—with a long necklace, or *lei*, of bright scarlet or brilliant yellow flowers, bare and untrammeled feet, and flowing hair, compares very favorably with a high-heeled, wasp-waisted, absurdly bonneted, fashionable white lady.

When you have seen Honolulu and the Nuanu Valley, and bathed and drank cocoanut milk at Waikiki, you will be ready for a charming excursion—the ride around the Island of Oahu. To this you should take several days. It is most pleasantly made by a party of three or four persons, and ladies, if they can sit in the saddle at all, can very well do it. You should provide yourself with a pack-mule, which will carry not only spare clothing, but some provisions; and your guide ought to take care of your

QUEEN'S HOSPITAL, HONOLULU.

ROYAL SCHOOL, HONOLULU.

horses, and be able, if necessary, to cook you a lunch. The ride is easily done in four days, and you will sleep every night at a plantation or ranch. For such excursions, and for your daily use in Honolulu, you can hire a good horse, well saddled and bridled, for six dollars per week; in which case you have no care of the animal, nor responsibility for it, and have it brought to you every morning at your hotel, in good condition. The proprietor of the hotel is most obliging, and will make all arrangements of this kind for you, and see that you are not swindled. The horses are better than I was led to expect; they are sure-footed and docile.

Every body rides in Honolulu, and it is the pleasantest way of getting about. But you can also hire carriages, and there are many pleasant short drives for those who will not ride. But I advise all who come here to ride, because you can not see the volcano except by a tolerably tiresome horseback journey from Hilo.

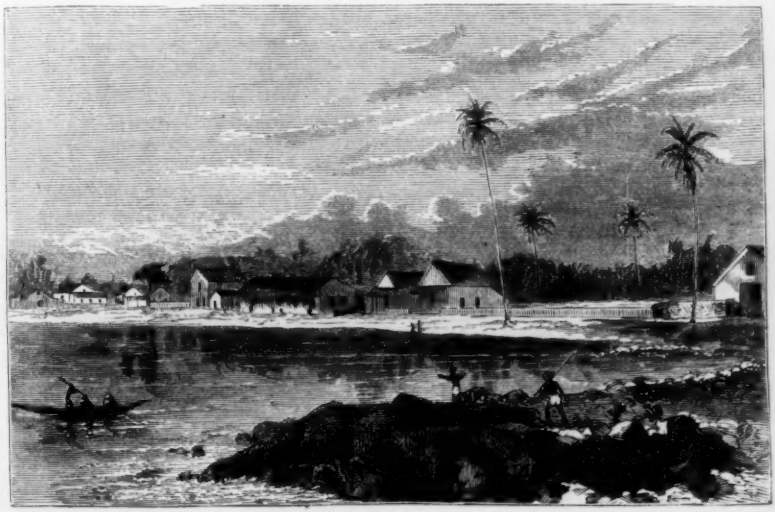
Hilo, as you will perceive on the map, is on the island of Hawaii. You get there from Honolulu in the little steamer *Kilauea*, which runs between the different islands. The charge is fifteen dollars from Honolulu to Hilo, or twenty-five dollars for the round

HAWAIIAN STYLE OF DRESS.

HAWAIIAN HOTEL, HONOLULU.—[SEE PAGE 384.]

trip. The cabin is small, and if you have fine weather you will, even if you are a lady, pass the time more pleasantly on deck, where the steward, a Goa man, and the most assiduous and tactful of his trade, will place a mattress and blankets for you. You must expect to suffer somewhat from sea-sickness if you are subject to that ill, for the passage is not unlikely to be rough. On the way you see Lahaina, and a considerable part of the island of Hawaii; in fact, you are never out of sight of land.

If you start on Monday evening you will reach Hilo on Wednesday—and "about this time expect rain," as the almanac-makers say. They get about seventeen feet of rain



HILO.

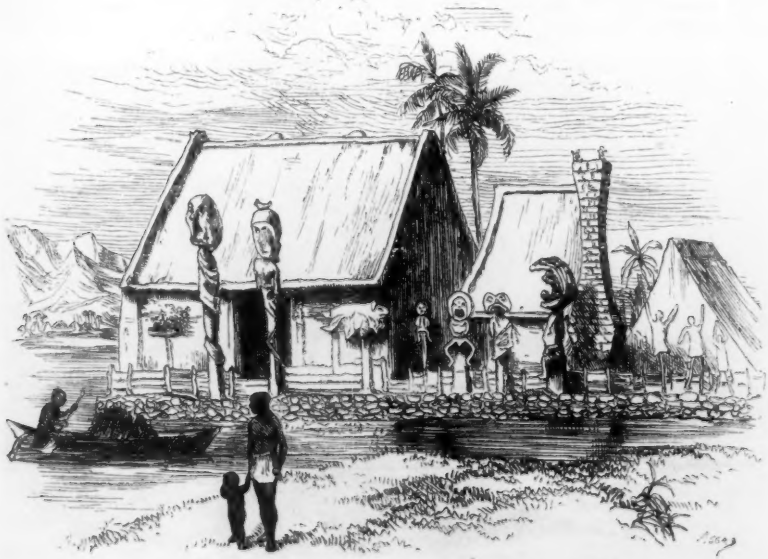
THE VOLCANO HOUSE.

at Hilo during the year; and as they have sometimes several days without any at all, you must look for not only frequent but heavy showers. A Hilo man told me of a curious experiment which was once made there. They knocked the heads out of an oil cask—so he said—and it rained in at the bung-hole faster than it could run out at the heads. You may disbelieve this story if you please; I tell it as it was told me; but in any case you will do well to provide yourself, for Hilo and the volcano journey, with stout water-proof clothing. Indeed, you need this for traveling any where on the islands.

Hilo—on those days when the sun shines—is one of the prettiest places on the islands. If you are so fortunate as to enter the bay on a fine day, you will see a very tropical landscape—a long, pleasant, curved sweep of beach, on which the surf is breaking, and beyond, white houses nestling among cocoa-nut groves, and bread-fruit, pandanus, and other Southern trees, with shops and stores along the beach. Men bathing in the surf, and men and women dashing on horseback over the beach, make up the life of the scene.

Hilo has no hotel; it has not even a carriage; but it has a very agreeable and intelligent population of Americans, and you will find good accommodations at the large house of Mr. Severance, the sheriff of Hawaii. If his house should be full, you need not be alarmed, for some one will take you in.

This is the point of departure for the volcano. Here you hire horses and a guide for the journey. Having gone to Hilo on the



HAWAIIAN TEMPLE, FROM A RUSSIAN ENGRAVING, ABOUT 1790.

steamer, you will do best to return to Honolulu by a schooner, as this will give you abundant time to make the journey, and will not unnecessarily delay you. Unless you intend a more thorough exploration of Hawaii, your pleasantest plan is to ride from Hilo by the direct road to the crater, and return by way of Puna. You will have ridden a trifle over 100 miles through a very remarkable and in some parts a beautiful country; you will have slept one night in a native house, and will have seen as much as you want of Hawaiian life, and enjoyed a tiring but at the same time a very novel journey.

The charges are sufficiently moderate. At Hilo you pay for board and lodgings eight dollars per week. The charge for horses is ten dollars each for the volcano journey, with a dollar a day for your guide. This guide relieves you of all care of the animals, and is in various ways useful. At the Volcano House the charge for horse and man is five dollars per day, and you pay half price for your guide. There is a charge of one dollar for a special guide into the crater, which is made in your bill, and you will do well to promise this guide, when you go in, a small gratuity—half a dollar, or, if your party is large, a dollar—if he gives you satisfaction. He will get you specimens, carry a shawl for a lady, and make himself in other ways helpful.

When you get on your horse at Hilo for the volcano, leave behind you all hope of good roads. You are to ride for thirty miles over a lava bed, along a narrow trail, as well made as it could be without enormous expense, but so rough, so full of mud-holes filled with broken lava in the first part of the journey, and so entirely composed of naked, jagged, and ragged lava in the remainder, that one wonders how the horses stand it. A canter, except for two or three miles near the Volcano House, is almost out of the question; and though the Hawaiians trot and gallop the whole distance, a stranger will scarcely follow their example. You should insist, by-the-way, upon having all your horses reshod the day before they leave Hilo; and it is prudent even then to take along a pair of shoes and a dozen or two horse-nails. The lava is extremely trying to the horse's shoes, and if your horse casts a shoe he will go lame in fifteen minutes, for the jagged lava cuts almost like glass.

KAMEHAMEHA I.

Moreover, do not wait for a fine day; it will probably rain, at any rate, before you reach the Volcano House, and your wisest way is to set out resolutely, rain or shine, on the appointed morning, for the sun may come out two or three hours after you have started in a heavy rain. Each traveler should take his water-proof clothing upon his own saddle—it may be needed at any time—and the pack-mule should carry not only the spare clothing, well covered with India rubber blankets, but also an abundant lunch, to be eaten at the Half-way House.

QUEEN OF KAMEHAMEHA I.

India rubber or leather leggings, and a long sleeveless Mackintosh, seem to

EMMA, QUEEN OF KAMEHAMEHA IV.

me the most comfortable and sufficient guards against weather. Ladies should ride astride; they will be most comfortable thus. There are no steep ascents or abrupt descents on the way. Kilauea is nearly 4000 feet higher than the sea, from which you set out; but the rise is so gradual and constant that, if the road were good, one might gallop a horse the whole distance. You should set out not later than half past seven, and make up your mind not to be hurried on the way. There are people who make the distance in six hours, and boast about it; but I accomplished it with a party of ladies and children in ten hours with very little discomfort, and did not envy the six-hour people. There is nothing frightful, or dangerous, or disagreeable about the journey, even to ladies not accustomed to riding; and there is very much that is new, strange, and wonderful to Americans or Europeans. Especially you will be delighted with the great variety and beauty of the ferns, which range from minute and delicate species to the dark and grand fronds of the tree-fern, which rises in the more elevated region to a height of twenty feet, and has sometimes a diameter of three or four feet. From a variety of this tree-fern the natives take a substance called pulu, a fine, soft, brown fuzz, used for stuffing pillows and mattresses.

Your guide will probably understand very little English: let him be instructed in your wishes before you set out. The native Hawaiian is the most kind and obliging creature in the world, and you will find your guide ready to do you every needful service. You can get nothing to eat on the road, except, perhaps, a little sugar-cane; therefore you must provide a sufficient lunch. At the Half-way House, but probably nowhere else, you will get water to drink.

When you reach the Volcano House I advise you to take a sulphur vapor bath, refreshing after a tedious ride, and after supper you will sit about a big open fire, and recount the few incidents and adventures of the day.

The next day you give to the crater. Unless the night is very foggy you will have gone to sleep with the lurid light of Kilauea in your eyes. Madame Pele, the presiding goddess of the volcano, exhibits fine fireworks at night sometimes, and we saw the lava spurting up in the air above the edge of the smaller and active crater, one night, in a quite lively manner. On a moderately clear night the light from the burning lakes makes a very grand sight, and the bedrooms at the little Volcano House are so placed that you have Madame Pele's fire-works before you all night.

The house stands but a few feet from the edge of the great crater, and you have no tedious preliminary walk, but begin your descent into the pit at once. For this you need stout shoes, light clothing, and, if you have ladies in your party, a heavy shawl for each. The guide takes with him a canteen of water. You should start about nine o'clock, and give the whole day to the crater, returning to dinner at five.

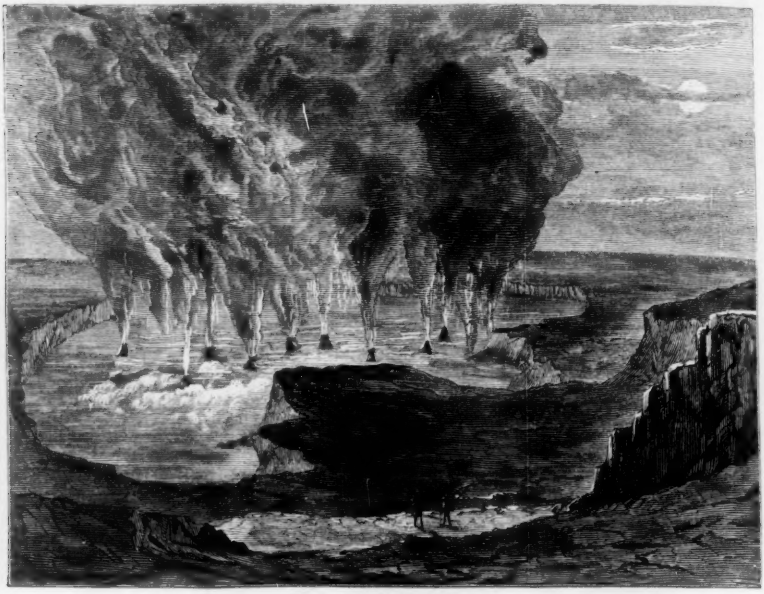
The great crater of Kilauea is three miles in circumference, and perhaps a thousand feet deep. It is, in fact, a deep pit, bounded on all sides by precipitous rocks. The entrance is effected by a series of steps, and

COLONEL DAVID KALAKANA, A HAWAIIAN CHIEF.

LUNALILO, THE NEW KING.

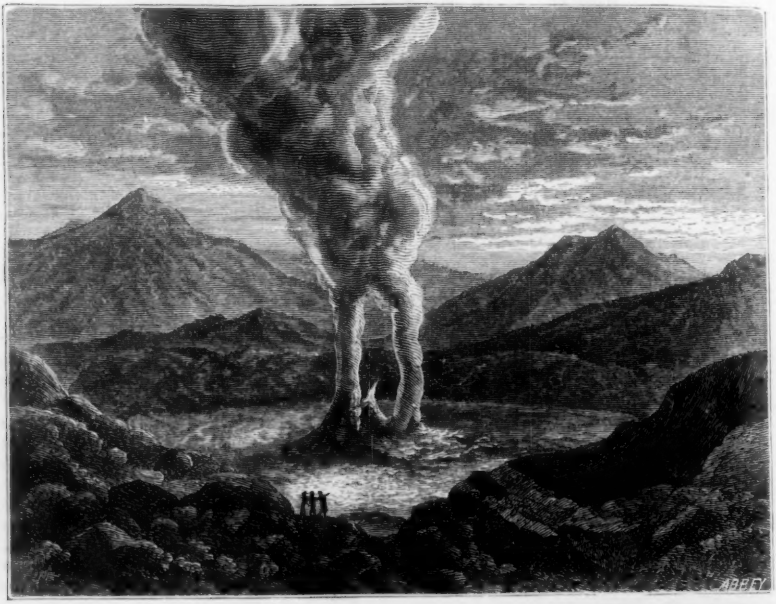
below these by a scramble over lava and rock débris. It is not difficult, but the ascent is tiresome, and it is a prudent precaution, if you have ladies with you, to take a native man for each lady, to assist her over the rougher places, and up the steep ascent. The greater part of the crater is at present a mass of dead though not cold lava, and over this you walk to the farther extremity of the pit, where you must ascend a tolerably steep hill of lava, which is the bank of the fiery lake. The distance from the Volcano House to the edge of the lake is, by the road you take, three miles.

The goddess Pele is, as some say all her sex are, variable, changeable, mutable. What I shall tell you about the appearance of the crater and lake is true of that time; it may not be true a week later; it was certainly not correct a month before. We climbed into the deep pit, and then stood upon a vast floor of lava, rough, jammed together, broken, jagged, steaming out a hot sulphurous breath at almost every seam, revealing rolls of later lava injections at every deep crack, with caverns, and high ridges where the great mass, after cooling, was jammed together, and with a steep mountain-side of

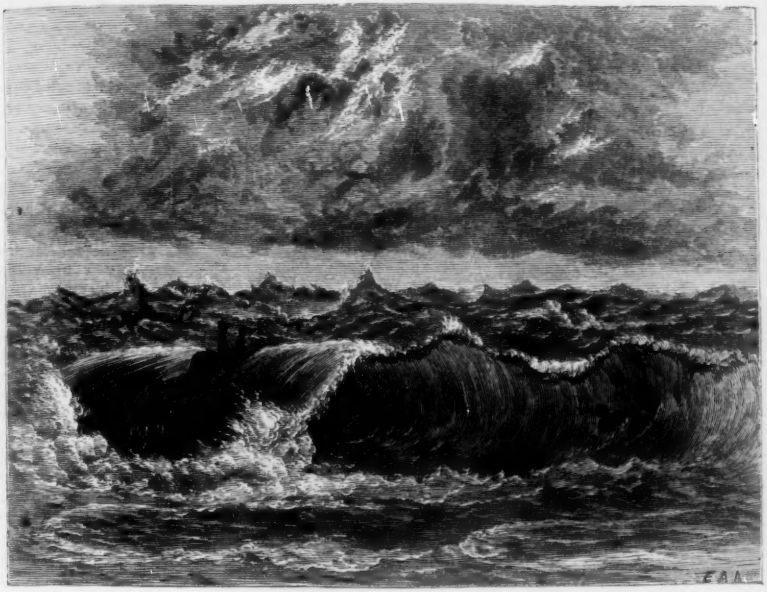


CRATER OF KILAUEA.

lava at our left, along the foot of which we clambered. This floor of lava, which seems likely to be a more or less permanent feature, was three or four years ago upon a level with the top of the high ridge whose base you skirt. The main part of the crater was then a floor of lava vaster even than it now is. Suddenly, one day, and with a crash



VIEW OF THE CRATER OF SOUTH LAKE IN A STATE OF ERUPTION, FROM THE CREST OF THE NORTH LAKE.



SURF BATHING.

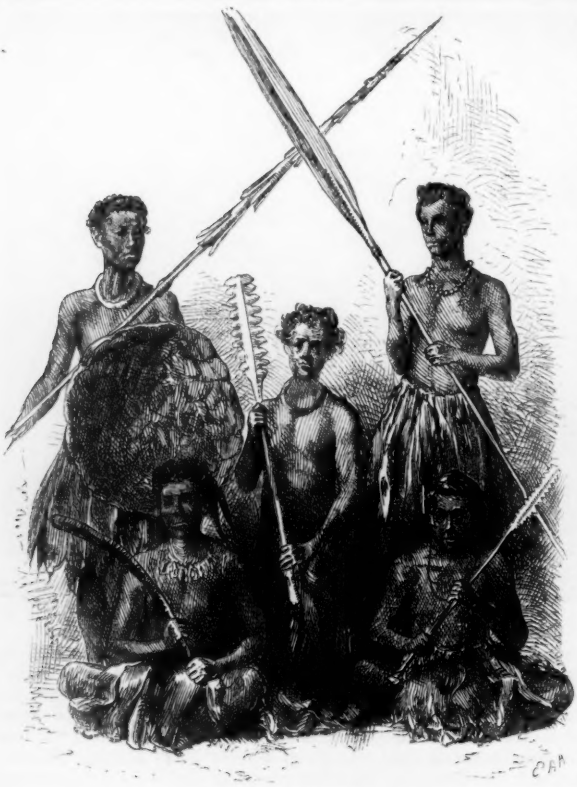
which persuaded one or two persons at the Volcano House that the whole planet was flying to pieces, the greater part of this lava floor sunk down, or fell down, a depth of about five hundred feet, to the level whereon we now walked. The wonderful tale was plain to us, as we examined the details on the spot. It was as though a top-heavy and dried-out pie-crust had fallen in in the middle, leaving a part of the circumference bent down, but clinging at the outside to the dish.

After this great crash the lava seems from time to time to have boiled up from beneath through cracks, and now lies in great rolls upon the surface, or in the deeper cracks. It is related that later the lake or caldron at the farther end of the crater boiled over, and sent down streams of lava, which meandered over the black plain; that, continuing to boil over at intervals, this lake increased the height of its own banks, for the lava cools very rapidly; and thus was built up a high hill, which you ascend after crossing the lava plains, in order to look down, in fear and wonder, upon the awful sight below.

What we saw there on the 3d of March, 1873, was two huge pits, caldrons, or lakes filled with a red, molten, fiery, sulphurous, raging, roaring, restless mass of matter, to watch whose unceasing tumult was one of the most fascinating experiences of my life.

The two lakes are separated by a narrow and low-lying ledge or peninsula of lava, which I was told they frequently overflow, and sometimes entirely melt down. Standing upon the northern bank, we could see both lakes, and we estimated their shortest diameter to be about 500 feet, and the longest about one-eighth of a mile. Within this pit the surface of the molten lava was about eighty feet below us. It has been known to sink down 400 feet, and last December it was overflowing the high banks, and sending streams of lava into the great plain by which we approached it.

What, therefore, Madame Pele will show you hereafter is uncertain. What we saw was this: two large lakes, or caldrons, each nearly circular, with the lower shelf, or bank, red-hot, from which the molten lava was repelled toward the centre without cessation. The surface of these lakes was of a lustrous and beautiful gray, and this, which was a cooling and tolerably solid scum, was broken by jagged circles of fire, which appeared of a vivid rose-color, in contrast with the gray. These circles, starting at the red-hot bank or shore, moved more or less rapidly toward the centre, where, at intervals of perhaps a minute, the whole mass of lava suddenly but slowly bulged up, burst the thin crust, and flung aloft a huge fiery wave, which sometimes shot as high as thirty feet in the air. Then ensued a turmoil, accompanied with hissing and occasionally with a dull roar, as the gases sought to escape, and spray was flung in every direction; and presently the agitation subsided, to begin again



HAWAIIAN WARRIORS.

in the same place, or perhaps in another. Meantime the fiery rings moved forward perpetually toward the centre, a new one reappearing at the shore before the old was ingulfed, and not unfrequently the mass of lava was so fiercely driven by some force from the bank near which we stood that it was ten or fifteen feet higher near the centre than at the circumference. Thus somewhat of the depth was revealed to us, and there seemed something peculiarly awful to me in the fierce glowing red heat of the shores themselves, which never cooled with exposure to the air and light.

Thus acted the first of the two lakes. But when, favored by a strong breeze, we ventured further, to the side of the furthermost one, a still more terrible spectacle greeted us. The mass in this lake was in still more violent agitation; but it spent its fury upon the precipitous southern bank, against which it dashed with a vehemence equal to a heavy surf breaking against cliffs. It had undermined this lava cliff, and for a space of perhaps 150 feet the lava beat and surged into glaring cavernous depths, and was repelled with a dull, heavy roar not exactly like the boom of breakers, because the lava is so much heavier than water, but with a voice of its own, less resonant, and, as we who listened thought, full of even more deadly fury.

It seems a little absurd to couple the word "terrible" with any action of mere dead matter, from which, after all, we stood in no very evident peril. Yet "terrible" is the word for it. Grand it was not, because in all its action and voice it seemed infernal. Though its movement is slow and deliberate, it would scarcely occur to you to call either the constant impulse from one side toward the other, or the vehement and vast bulging of the lava wave as it explodes its thin crust or dashes a fiery mass against the cliff, majestic, for devilish seems a better word.

Meantime, though we were favored with a fresh and strong breeze, bearing the sulphurous stench of the burning lake away from us, the heat of the lava on which we stood, at least eighty feet above the pit, was so great as to be almost unendurable. We stood first upon one foot, and then on another, because the soles of our feet seemed to be scorching through thick shoes. A lady sitting down upon a bundle of shawls had to rise because the wraps began to scorch; our faces seemed on fire from the reflection of the heat below; the guide's tin water canteen, lying near my feet, became presently so hot that it burned my fingers when I took it up; and at intervals there came up from behind us a draught of air so hot and so laden with sulphur that even with the strong wind carrying it rapidly away it was scarcely endurable. It was while we were coughing and spluttering at one of these hot blasts, which came from the numerous fissures in the lava which we had passed over, that a lady of our party remarked that she had read an excellent description of this place in the New Testa-

ment, and so far as I observed, no one disagreed with her.

After the lakes come the cones. When the surface of this lava is so rapidly cooling that the action below is too weak to break it, the gases forcing their way out break small vents, through which lava is then ejected. This, cooling rapidly as it comes to the outer air, forms by its accretions a conical pipe of greater or less circumference, and sometimes growing twenty or thirty feet high, open at the top, and often with openings also blown out at the sides. There are several of these cones on the summit bank of the lake, all ruined, as it seemed to me, by some too violent explosion, which had blown off most of the top, and in one case the whole of it, leaving then only a wide hole. Into these holes we looked, and saw a very wonderful and terrible sight. Far below us was a stream of lava, rolling and surging and beating against huge precipitous red-hot cliffs, and higher up, suspended from other, also red or white hot overhanging cliffs, depended huge stalactites, like masses of fiercely glowing fern leaves waving about in the subterraneous wind; and here we saw how thin was in some such places the crust over which we walked, and how near the melting-point must be its under surface. For, as far as we could judge, these little craters, or cones, rested upon a crust not thicker than twelve or fourteen inches, and one fierce blast from below seemed sufficient to melt away the whole place. Fortunately one can not stay very long near these openings, for they exhale a very poisonous breath; and so we were drawn back to the more fascinating but less terrible spectacle of the lakes, and then back over the rough lava, our minds filled with memories of a spectacle which is certainly one of the most remarkable our planet affords.

When you have seen the fiery lakes you will recognize a crater at sight, and every part of Hawaii and of the other islands will have a new interest for you; for all are full of craters, and from Kilauea to the sea you may trace several lines of craters, all extinct, but all at some time belching forth those interminable lava streams over which you ride by the way of the Puna coast for nearly seventy miles back to Hilo. I advise you to take this way back. Almost the whole of it is a land of desolation. A narrow trail across unceasing beds of lava, a trail which in spots was actually hammered down to make it smooth enough for travel, and outside of whose limits in most places your horse will refuse to go, because he knows it is too rough for beast or man, this is your road. Most of the lava is probably very ancient, though some is quite recent, and ferns and guava bushes and other scanty herbage grow through it. In some of the cavernous holes, which denote probably ancient cones, you will see a cocoa-nut tree or a pandanus trying to subsist; and by-and-by, after a descent to the sea-shore, you are rewarded with the pleasant sight of groves of cocoa-nuts and umbrageous arbors of pandanus, and occasionally with a patch of green. Almost the whole of the Puna coast is waterless. From the Volcano House you take with you not only food for the first day, but water in bottles, and your thirsty animals get none until you reach the end of your first day's journey, at Kaimu, where you can send a more than half naked native into the trees for cocoa-nuts, and drink your fill of their refreshing milk, while your jaded horses swallow bucketfuls of rain-water.

It will surprise you to find people living among the lava, making potato patches in it, planting coffee and some fruit trees in it, fencing in their small holdings, even, with lava blocks. Very little soil is needed to give vegetation a chance in a rainy season, and the decomposed lava makes a rich earth. But, except the cocoa-nut, which grows on the beach, and seems to draw its sustenance from the waves, and the sweet-potato, which does very well among the lava, nothing seems really to thrive. This is true all over the islands. If you ask about oranges, you hear that, except in a very few favored localities, the orange-tree suffers from a blight. The coffee culture has almost perished, because of "the blight." The cacao is blighted. The mulberry makes a rank growth, but the black or white blight covers it. And so with almost all useful trees and plants. A lady said to me, "In truth, every thing which has been tried on our islands seems to have failed from this blight, or scale insect, except sugar-cane, and there is scarcely a plantation of sugar, even, which has not ruined the first, and in some cases the second, owners." Wheat and other cereals are not raised, but all imported. Even the forests are now perishing, partly because cattle eat the young shoots, and partly because an insect attacks the older trees. This is a serious inconvenience, because fuel is scarce, and as the woods disappear, the water-courses dry up, and the sugar-cane has of late, I am told, begun to suffer from a worm which eats out the pith, near the ground, and thus destroys the whole cane. For general agriculture the islands are worthless. A small or general farmer would not starve here, because he could always raise enough sweet-potatoes to live on; but he would never get on. Of specialties, the sugar culture is the only one which has not entirely failed; and yet when you hear of plantations which cost $50,000 sold by the sheriff for $15,000, or of plantations which cost $150,000 bought in for $40,000, and hardly paying a profit even on this minor sum, you will scarcely regard this industry as a thriv-

ing one. There are natural as well as artificial causes for this want of success; but I must reserve the discussion of these for another time. What is certain is that these islands, aside from their fine climate, have absolutely nothing to tempt our own people to live on them, or to invest money in them. The native, who lives on poi, bananas, cocoa-nuts, and fish, can always do well here; but the extent of agricultural land is so small, and what there is lies at such serious natural disadvantages for transportation, that the man who means to raise something to sell has no chance. More than one-half the surface of the islands is lava, which may, I suppose, in about three millions of years be worth perhaps a dollar and a quarter an acre. And even for grazing they are not suited, for there is no market for beef or mutton. They are beginning of late to boil down their cattle, and sell their hides and tallow; and a sheep farmer must depend entirely on his wool.

At Kaimu, twenty-five miles from the Volcano House, you sleep in a native house very comfortably, and under cover of the tappa, or native cloth. You must bring with you tea or coffee, sugar, and bread. Sweet-potatoes and bananas, and chickens caught after you arrive, with abundant cocoa-nuts, are the supplies of the place. The water is not good, and you will probably drink only cocoa-nut milk, until, fifteen miles further on, at Captain Eldart's, you find a pleasant and comfortable resting-place for the second night, with a famous natural warm bath, very slightly mineral. Thence a ride of twenty-three miles brings you back to Hilo, all of it over lava, most of it through a sterile country, but with one small burst of a real paradise of tropical luxuriance, a mile of tall forest and jungle, which looks more like Brazil than Hawaii.

Near Hilo are some pretty water-falls and several sugar plantations, to which you can profitably give a couple of days, and on another you should visit Cocoa-nut Island, and —as interesting a spot as almost any on the islands—a little lagoon on the main-land near by, in which you may see the coral growing, and pick it up in lovely specimens, with the stones upon which it has built in these shallows and protected waters. Moreover, the surf-beaten rocks near by yield cowries and other shells in some abundance; and I do not know any where of a pleasanter picnic day than that you can spend there.

Finally, Hilo is one of the very few places on these islands where you can see a truly royal sport—the surf-board. It requires a rough day and a heavy surf, but with a good day, it is one of the finest sights in the world.

The surf-board is a tough plank about two feet wide and from six to twenty feet long, usually made of the bread-fruit-tree. Armed with these, a party of tall, muscular natives swim out to the first line of breakers, and, watching their chance to duck under this, make their way finally, by the help of the under-tow, into the smooth water far off beyond all the surf. Here they bob up and down on the swell like so many ducks, watching their opportunity. What they seek is a very high swell, before which they place themselves, lying or kneeling on the surf-board. The great wave dashes onward, but as its bottom strikes the ground, the top, unretarded in its speed and force, breaks into a huge comber, and directly before this the surf-board swimmer is propelled with a speed which we timed and found to exceed forty miles per hour. In fact, he goes like lightning, always just ahead of the breaker, and apparently down hill, propelled by the vehement impulse of the roaring wave behind him, yet seeming to have a speed and motion of his own.

It is a very surprising sight to see three or four men thus dashed for nearly a mile toward the shore at the speed of an express train, every moment about to be overwhelmed by a roaring breaker, whose white crest was reared high above and just behind them, but always escaping this ingulfment, and propelled before it. They look, kneeling or lying on their long surf-boards, more like some curious and swift-swimming fish—like dolphins racing, as it seemed to me—than like men. Once in a while, by some mischance the cause of which I could not understand, the swimmer *was* overwhelmed; the great comber overtook him; he was flung over and over like a piece of wreck, but instantly dived, and reappeared beyond and outside of the wave, ready to take advantage of the next. A successful shot launched them quite high and dry on the beach far beyond where we stood to watch. Occasionally a man would stand erect upon his surf-board, balancing himself in the boiling water without apparent difficulty.

The surf-board play is one of the ancient sports of Hawaii. I am told that few of the younger generation are capable of it, and that it is thought to require great nerve and coolness even among these admirable swimmers, and to be not without danger. For the sketch of it which accompanies this article, as well as one of Kilauea, I am indebted to the skillful pencil of Lieutenant-Commander William Bainbridge Hoff, of the flag-ship *California*. In going about the Hawaiian group the traveler must take with him every where saddle and bridle and horse furniture complete. A horse you can always hire or buy; but you are expected to have your own saddle. Thus you see the little steamer's hold, when she leaves Honolulu, contains few trunks or large bags, but a considerable collection of saddles and saddle-bags.

JOHN BLYTHE'S NAMESAKE.

JOHN BLYTHE and the minister were walking down town together. John always walked, having nothing to ride except his hobbies, which his friends declared he rode to death. But there was such an ever-increasing stud of those unpopular and costly racers that he was never without half a dozen reasonably fresh ones. And one of them, however hard-ridden, came up, unbreathed and active, for service every day. John could not remember when he had not been absorbed in the hope and the work of reforming prisoners, and of saving from crime the street Arabs who become prisoners. When he was six years old he had been permitted a birthday party, with the precious liberty of inviting the guests "hisself." But when the afternoon arrived, his unsuspecting mother found her pretty parlors invaded by twelve little gutter-snipes, not much cleaner as to vocabulary than as to person. John grew more and more radiant with delight at each grimy and slinking arrival, so that his mother had hardly the heart to call him to account. And when she took him apart to say, "Johnny, how could you bring those dreadful boys into mamma's nice clean house?" he looked up with such pained amazement that she was silenced. "Why, mamma," he said, "you told me I might invite which twelve little boys I choosed, and I choosed these, 'cause I knew they didn't ever go to a birthday before." Mrs. Blythe felt an uneasy apprehension that practical Christianity might be a little uncomfortable in general use. But remembering a certain Divine prescription of the etiquette pertaining to a feast, which insisted on the bidding of them who could not bid again, she only said, "Well, Johnny, tell mamma beforehand next time. And now we must take all your little friends up to the bath-room and give them a scrub, before they play with the toys."

Which very remarkable attention the young vagabonds received, by means whereof they would have remembered the day forever as set apart from all others in their limited experience, had it not also been set apart as a bewilderment of games, cakes, beautiful surroundings, and double handfuls of candy as a sort of stirrup-cup.

The John of six-and-thirty was hardly more conventional and no whit more selfish than the John of six. And now he was urging the minister to take up a scheme of his for deporting certain bad characters to a new field, where he believed they would reform. "You are too hard on them, Egerton," he was saying, in his vehement way. "I tell you, we make 'em thieves and keep 'em thieves, and then shut 'em up, because they are thieves, in places where they shed their thieves' skin and come out something worse. It's the logic of events. I've got some friends in Rag-pickers' Row: carriage people: drive a dog in a soap-box, these aristocrats. Sometimes I drop in there when I think the world is too careless of my high mightiness. It's a nasty cure for peevishness, but thorough. The Row has its water view—a mud-puddle that is never dry, inhabited by an ague that's never at home, but always out calling in the neighborhood. The rooms are ten by twelve, a family in every room, and at least ten souls, or cases for souls, in every family. The lower the breed, the larger the litter always. What do these creatures breathe? Air? No: stinks! What do they eat? Food? No: garbage! What do they wear? Clothes? No: rags and infection! What fluid is in their veins? Blood? No: poison! What do they do? Live? No: putrefy, body and bones, heart and brain! The brats are turned into the street as soon as they can toddle, to beg or steal. They get into the Tombs, of course, and on the Island, and so to Sing Sing, and so to a bad death. In short, they're born in hell, and live in hell. And I declare to you again that I don't believe a just and tender Father will give them hell hereafter till they've had at least a chance."

"My dear John," said his friend, "you can't wash convicts clean in baths of sentiment. You yourself wouldn't trust a convict's repentance without long probation. There's a great deal to be said on the other side; but this is my corner, and I have work to do. I'll consider the question, and help you if I see my way."

Blythe turned down a quiet cross-street, and was startled out of his meditation by a woman's scream. At the same instant a man, stumbling up the steps of a deep area, ran violently against him. "Not so fast, friend," said Blythe. "It's not polite to run away when people want your company. We'll just turn in here and see for which of our virtues we are thus desired." There was no shaking himself free from the strong grip of his captor, and the man obeyed.

"What's the row, my girl?" said Blythe to the servant at the window.

"Oh, the black thafe!" she cried. "Sure I set me spoons on the winder-sill, and it open a minute wid the dust, and me sweepin', and the blatherin' thafe he rached in an' tuk 'em, and me ketchin' him in the act."

"Search me," said the man, quietly.

It was early. Nobody was in the street. Blythe took the man into the area, and turned his pockets inside out. Not so much as a pawn-ticket appeared. "Friend," said he, "I must trouble you to take off your boots."

The man laughed uneasily. "Game's up," he said. "Take your spoons, watchful Bridget. I'm to go to the jug, I suppose. Who cares?"

"Are the spoons all right, my girl?" asked the amateur detective.

"An' why not, thanks to yer honor, and bad cess to the murdtherin' rogue, to be takin' yer honor's time. And I'll take me book oath agen him whenever yer honor says."

"All right," said Blythe. "Good-morning. Come with me, my Turpin bold."

The man went quietly for a few paces and then stopped. "What are you going to do with me?" he said.

"Well," said Blythe, "either put you in nomination for civic honors, as alderman, for instance, where your talents wouldn't remain hid in a napkin, or give you in charge, I think."

"Couldn't you kick me, Sir, and let me go?" asked the man, eagerly.

Blythe laughed aloud. "Corporal punishment, as opposed to moral suasion, eh? Well, perhaps. Where do you live?"

His captive studied his face. It was so open and kindly, the laugh had been so hearty, that he said, suddenly, "I wouldn't like to lie to you, Sir. I don't live any where. I come out of jail for the third time last Tuesday. I'm a regular jail-bird, I am, and I don't expect to be nothing else. I'm too old. And I don't suppose it matters how soon I go back." The man's voice was steady enough, but his lip twitched a little.

"Then you didn't breakfast at Delmonico's this morning?" said Blythe.

"I didn't breakfast nowheres these two days, Sir," replied the prisoner.

"My young friend," said his queer keeper, "I have ever observed throughout my virtuous life that when there is a chronic emptiness of the stomach, there is a corresponding shakiness of the moral nature. Here is my card. Will you do me the honor and pleasure of breakfasting with me?"

The amazed convict replying not, was forthwith haled to a cellar-restaurant, where, having ordered half the bill of fare, Blythe sat back in his chair complacently observing the famished eagerness of his human wolf. When even the chronic emptiness was temporarily filled, the wolf said, sheepishly, "I don't mind telling you, Sir, since you've acted so handsome, that I wouldn't have took them spoons if I hadn't ha' been just starved. That ain't no excuse in the courts, I know, and I expect to go up for it; but I thought you'd kind o' feel as if you hadn't wasted your money so bad if you knew how holler I was. I'm ready now, Sir, if your time's up."

"Not quite up," said John. "Suppose you tell me how it began. Perhaps I could speak a word for you. I'm a lawyer."

The other stared with surprise. "A lawyer," he said, "and give away a breakfast like that! That beats cracky! But there's nothing to tell, Sir. I'm a wheelwright. I got sent up the first time for being drunk and disorderly. I lost my place, and then come a strike, and no work; and I took a nip sometimes, and got sent up for petty larceny. And I sort o' slipped into the thieves' ring; and byme-by I got a three years' term. But I was sick of the business, and I worked hard and kept the rules, and got a good name. So when I come out, I goes to my old shop to get work; and, thinks I, 'tain't fair to the boss not to own up, 'cause he might have hard words heaved at him by the rest of the hands if they found it out. And so he wouldn't take me; and none of the other bosses wouldn't, 'cause I told 'em—for, thinks I, 'taint no use to pretend you want to be honest with a lie on to your tongue. So then I tried to get porter's work, and other things, but nobody wouldn't take a man without a character. I don't blame 'em. I s'pose I shouldn't myself, if I was them. Well, I hadn't no money nor credit, but I used to want my victuals just as regular as though I had good wages; and so I took a watch, and got sent up again. I'm a pretty decent chap in jail, you see. I don't get no liquor, and after a little I don't want it. And I'm a proper good workman. And the warden he used to let me have the picture papers on Sundays—*Harper's Weekly*, you know, and the rest. And I made up my mind again that I'd just be a new man when I got out. So I did get out last Tuesday, with these clothes and two dollars, and a nice new knife that the warden give me. So then I tried right off for work. And when the boss says, 'Where did you work last?' I says, 'Come, now, I won't tell you no lies. I worked at the prison; I'm a convict.' And then 'twas the same old story. So I sold the knife and a handkerchief, and the last of them and my two dollars was eat up and slep' up night before last. So yesterday I didn't have no victuals; and I thought maybe I'd go to some minister and tell him. But ministers ain't much in my way; and, besides, I didn't want to beg—I wanted to work. So I walked round all night last night, 'cause I couldn't go into them holes to the station-houses to sleep—I know 'em too well. And when I see them spoons waiting in the winder this morning purpose to be took, I couldn't hold out no longer. I didn't expect to get nabbed; but I guess I didn't care much. And that's all," said the man, pulling up suddenly. "I guess having to hold your tongue so much up to the prison kind o' makes it run at both ends when you get out. And I beg your pardon, Sir, for doing of it. But, if it's the same to you, I'd ruther push along to the station; for talkin' with you sort o' makes me hate to go back again." And he looked—this hardened convict—quite capable of human tears.

"I've concluded," said Blythe, quietly, "to transport you instead."

The man jumped up. "Why, that ain't American law, is it?" he cried. "Why should I care, though? Just as you say, Sir. You've treated me fair, and I don't doubt you know the law."

"It's Gospel, if it isn't law," said Blythe, heartily. "What is your name, my friend?"

"John Brand, Sir; but the name's a brand to me now, and if I'm to be shipped, I'll take another, if it ain't against the law."

"All right," said his sponsor: "take mine, 'John Blythe.' It's a good, honest name, and I'll trust you to keep it so. You're going to Philadelphia to a friend I have there in the carriage business; big house; good wages; chance to rise. I write to him and tell him all about you in a letter you take. He is not to report to me. If you do well, you'll be glad to let me know it yourself. If you don't, I'd rather not know it at all. I'll have no spies upon you, and I'll trust you to keep faith with me. You'll want another suit and ten dollars in your pocket to make you feel respectable. So now we'll go and get fitted, and buy our ticket, and take our rather damaged wares to a new market."

When John Blythe went home that night he laughed a little to himself to think how many of his investments in wild-cat humanity had brought back no dividends. But he always had faith in the last one. "The truth is," his mother had told the minister that morning, when she begged him to withhold her son a little from his prodigal benevolences—"the truth is that John regularly strips himself once a month or so for some plausible scamp. Three times this season has he come home without a waistcoat. And I fully expect to see the day when he will have to lie in bed to have his only shirt washed, his opulent beggars having pawned all the rest."

Blythe still lived with his mother, because he felt that no other woman would be happy with the perplexities which his constant experiments in sociology entailed on his household, and because he had never found a woman whom he could ask to share that poverty which might so easily have been wealth had he chosen to conduct his moral book-keeping according to received usage. In this new rogue he had taken much stock, as he said. The man was not only certain to reform, but to save hundreds of men like himself, whom he would know how to reach. But after one brief, ill-spelled, and dirty note to say that he had found work, and a friend in his employer, he made no sign. And when a year or two of silence had convinced even Blythe that the taint of ten years could not be cured by an hour's kindness, he only said, "Well, poor fellow, I ought to have kept him under my own eye. There was good in him. But I suppose life was too hard."

So eight years went by, Blythe going his daily round of unostentatious duty, never dreaming that he was a saint in shabby vestments, and only seeing that each day he let slip some chance of helpfulness which he might have seized. His business had not thriven as he had hoped. Men were a little shy of such a Quixote, genius though he was; and he was so certain to refuse cases where the right was not clearly on his side that his fees grew fewer year by year. It was hard, because he saw such good that might be done with money. But he only pinched himself the more.

There came in time a cholera summer. People fled the city in herds. Almost nobody was left, save the wretches who could not fly, and whose poverty, ignorance, and dirt predetermined them victims. By day and by night, in the stews and slums of the town, horrible in the August heat and stenches, John Blythe watched and worked. His perfect health, which seemed to place him beyond peril of infection, his skill in nursing, his tenderness, and the quiet courage which roused an answering courage in the affrighted victims, made him invaluable to the doctors. He often met one other volunteer nurse, not less invaluable than himself, the physicians said. But beyond civil greetings they had neither time nor thought to bestow on each other.

But one morning as Blythe left the hospital, after a hard and weary night's work, he overtook his silent fellow-worker. The latter lifted his hat, and as the clear early light fell on his face it looked so familiar and so friendly that Blythe stopped, saying, "Surely I must know you, my good Sir?"

"Yes," said the stranger, heartily, "you are perhaps the only person who ever did know me. Our acquaintance began in a breach of good manners on my part, for I asked an important personal favor before being introduced. You may remember being solicited to kick me and let me go on a morning much like this!"

John Blythe, the first of the name, dragged his namesake into a friendly doorway, within whose shelter he first fell on his neck and kissed him, and then sat down on the very dirty stairs and cried. John Blythe, the second of the name, leaning on the balustrade, also cried.

The sponsor was the first to recover his speech. "History repeats itself," he said. "Twice found in the street, and a second time to be invested in my clothes—for we can't take breakfast in these—and again to break the bread that precedes a new career together—for I never will let you out of my sight again, you rascal—and once more to set you up in other business—for now you are to be your own biographer, and tell me tales of yourself for a thousand and one nights. But be pleased to hold your tongue till we have both bathed and eaten, or we

shall both be down with the cholera, and the two best nurses too engaged to attend to us."

But when they had refreshed themselves with water and fresh linen, and had eaten their breakfast together in the cellar-restaurant where they had first adopted each other, the elder entreated the younger to speak. "My boy," he said, "we shall have observed the dramatic unities in a way to satisfy Dr. Johnson himself, when in that very chair you tell me your story. Come, now—*Enter John Blythe, second, solus, loquitur.*"

"I'm almost deaf and dumb with joy, Sir," answered his namesake, "and I'm afraid that I'm not a much better fist at talking about myself than I was when you first invited me to do it, and made a man of me. I have often thought of late that I had done wrong not to write. But the truth was that after I had written you that I'd gotten a hold on life again, it seemed a little contemptible to be hanging on to you, even with letters, when I could stand alone. And I was afraid you might think I wanted money, or notice, or the help of your name, if I kept reminding you of me. I think now it was pride, but then I thought it was humility. And I set up a certain stint to myself to do before I would write again. I told you I was an extra good workman. 'Well,' I said, 'I'll get extra good pay, and then I'll write and say that deeds are a better coin than words to pay one's debts in, and that I've got some of this good tender to show how grateful I am.' Of course I had to begin low, and work up. And I felt my ignorance, and got books, and studied every night and Sundays. That was much the toughest job of the two, the book-learning. But Mr. Bradbury watched me for your sake, and when Mr. John was at home in vacations he used to come down and talk to me, and when he found that I was trying to improve myself, he offered to help me, and after that I got on famously. Presently I saw that it all depended on me how soon I should be made foreman, and I worked like all possessed, meaning to write to you as soon as I got the place. Having no expenses to speak of, I began to lay up money from the first, and a perfect greed of getting and saving took hold of me, for I wanted to astonish my astonishing godfather with the amount of it. But Mr. Bradbury was buying land here and there in the suburbs where he knew the horse-railroads were going to put it up, and he said to me, 'John, if you choose to risk your money in land, I'll buy for you as I buy for myself, and I think we shall make a good thing.'

"Well, of course I did choose. And, what isn't of course, we did make money hand over hand. And it seemed as if I was foreman in no time. And then I thought, 'No, I won't write just yet, for the signs are that I shall be manager. Sure enough, that wasn't far off either. For the young gentlemen didn't like the business, and the old gentleman was wrapped up in it, and couldn't bear to think that it would go all to pieces when he should die. So he pushed me, and I pushed myself, and every wind that blew seemed to fill my sails. My money just rolled over like a great snow-ball. And the harder I studied, the clearer my head grew and the easier it seemed, though I found out, like Mr. Boffin, that there were lots of 'scarers' in print.

"Well, I hadn't more than turned round, it seemed to me, after I was manager, before Mr. Bradbury sent for me again, and told me that I was so well up in the business, financial and mechanical, that he was prepared to offer me a junior partnership if I liked. I don't suppose the Emperor of Roosha thinks half so well of himself as I did then, Mr. Blythe. But, after all, it wasn't the success itself that I cared about, but just the bringing of it back to you, and saying, 'It's all yours, Sir; the credit of it, and the money, and the man that you made out of a vagabond with your heavenly kindness.'

"So then I sat down and wrote you a letter, and told you all of this long story. But when it was done, a great light fell on me, as it did on Paul. And I saw that, after all, I was going to make you a miserable return. For I had just settled right down, and grubbed for money and grubbed for learning, just to make myself a little worthier to be your friend, and a little more important in your eyes, and to be able to spend it for you. And I had not made the world really any better off for my being in it. I thought how different my narrow notion of virtue was from yours, that helps every body, for Mr. Bradbury had told me all about you, Sir. And I felt that I wasn't worth shucks. So I tore up the letter, and began to live a different life. I knew well enough that my work lay among the prisoners, and for a year I've done what I could for them. But that's not the point now. Still I didn't feel fit to come back and beg you to live with me, and that was the dream of my life. I was possessed to do some tremendous thing, like saving a family from a burning house, or from a wreck, maybe, at the risk of my life. And I was in that mood when the news of this awful cholera came over, and I saw my chance. I knew that you would be in the worst of it, and in my thoughts I saw you meeting me, and being so pleased and astonished. Well, I came; and I saw you the first day, and you didn't know me. I had never thought of that chance. And it was a kind of blow to me, for it seemed as if you had never been out of my thoughts, sleeping or waking, and I felt clean forgotten. So I made up my mind not to speak till you knew me, unless you should get the sickness, or I should. But just to see you every day has been new life to me. And

that's all," he said, laughing like a boy at his own tears.

John Blythe never knew what he said in answer. He talked almost as long as his namesake had done. He planned a little holiday that they should have together when their nursing was over. And when they rose from the table he said, with quaint reverence, "John, henceforth there is a new sacrament for me. It is the Lord's breakfast, for I shall always believe that the risen Lord has twice sat with us at meat."

"Most folks would think He'd lost His way," said the other, "to sit down in a cellar and eat with a convict, where there was no table-cloths nor silver forks; but I guess, Mr. Blythe, He'd go most any wheres you go, because you're just one of His kind. I'm on duty at eleven o'clock, and I must put out. But a few hours of parting don't matter to a man who's had so many years of it. And we can have dinner together, can't we?"

"All dinners and all breakfasts, dear son of my love," cried Blythe. "We shall live together now, and help one another. I shall come down to you as soon as I have had my sleep."

But when he ran up the hospital stairs that afternoon, thrilled with his new joy and strong with its strength, he found the house surgeon waiting for him. "Mr. Blythe," said he, "we've had our worst stroke of luck this morning. That capital nurse—bythe-bye, queerly enough, his name is Blythe too, I find—is down with the disease, and it will go hard with him. He has had some great excitement to-day. I saw it the instant he came in—eyes all aflame, face perfectly transfigured, hands trembling. He is not strong. Early dissipation, I reckon, and overwork in business. And lately this awful hospital duty, and the devil's own heat besides. When a strong excitement was added to those strains he broke right down. I stopped you to tell you that you must take care of him, and that if you can get him to tell you what is burning him up, it may save his life, though I doubt. And talking's a bad remedy too, for he ought to be quiet."

"But I know what it was that used him up, and he trusts me. Then what?"

"My dear fellow, then we may save him. We won't give him up."

But the poor soul that had never known a childhood, nor an unstained youth, nor the love of woman, nor the kiss of little children, was to begin the new life where all these, or their recompense, might await him. He did not talk. He was content to lie still and look at John Blythe's face. But at the last the chaplain stood beside him too. And when he asked, "Do you trust in the mercy of God, dear brother?" the fading eyes looked with unutterable love in Blythe's, and the spent voice said, clearly, "He gave His angel charge concerning me to keep me up, lest I should dash my foot against a stone." Then they left the bedside, for the living needed them.

He had given his papers to his friend, and among them was a copy of his will. In token of his love he had left all his property to "John Blythe, for whom I was named, and to whom I owe all that I have and am." It was a legacy that grew in bulk day by day, and made many an abject creature happier. And it is still, in other hands, doing its good work, though the last earthly record of the two obscure lives whose gift it was is written on a little slab in Greenwood, thus:

SACRED TO THE MEMORY
of
JOHN C. BLYTHE:
and of
JOHN BLYTHE,
HIS BELOVED NAMESAKE.

TEN YEARS AMONG THE ROWING MEN.

BY WILLIAM BLAIKIE.

NEAR the heart of Massachusetts, and not far from the Worcester hills, two or three little brooks come together and form a stream, which, soon widening into a river, commences somewhere to be called the Charles; and quietly wending its way along, here taking a turn through the Waltham of Banks (N. P. Banks, of course) and watches, and there passing by Watertown's arsenal, Lowell's Elmwood, and Longfellow's stately mansion, runs almost up to the door of the first university of America, and then turns away toward the good old city which has done so much to bring to all New England—and more than New England—honor and renown. But, singularly enough, instead of entering, it avoids it altogether, just stopping a moment for a look at Bunker Hill, and then, uniting with the gentle Mystic, goes away down to the sea. The broad basin into which it opens directly back of Boston has long been the training course of Harvard University, and that city also, quicker than any of her sisters to see the attractions of a well-ordered boat-race, has almost regularly, during over twenty years, made this same stretch of water contribute to the festivities of the anniversary of the nation's birthday. Local crews, and often distinguished strangers, took part in these contests, and undoubtedly thus did much by their rivalry toward keeping the

students vigilant and ever trying their best. Steadily improving boats, and oars too, noting the mistakes of their antagonists, comparing their various styles of rowing and methods of training, and yearly accumulating traditions and experience, have all combined to make Harvard a most generous contributor to the amateur rowing of America; and when the unequaled proportions of the inter-collegiate regatta of this year are considered, most deservedly does she come in for a liberal share of public notice and good-will.

Yet, notwithstanding these advantages, the fondness of her oarsmen, in common with a great majority of those all over the country, until very recently at least, for the old and most objectionable methods of training is surprising. Men would be required to turn out and run, walk, or row long distances before breakfast, when for twelve hours or more they had eaten nothing, and would come back faint and half famished, and with that all-gone feeling that work under such conditions brings, and which would frequently stay by them all day. Then their bill of fare would contain little else than underdone beef and mutton, stale bread, a very stingy allowance of potatoes, and none at all of any other vegetable; sometimes tea, never any other drink but water, and one tumbler of that for breakfast, two for dinner, and one for supper, and not even this much if they could possibly do without it, and with nothing at all between meals; and this no matter how fierce the heat and how severe their work.

No wonder that, with such lack of variety of nutrition, sore boils broke out on them, until we heard of one man who had seventy-three! No wonder that men could not sleep, and getting up at midnight, and faithful to their orders, not slaking their burning thirst, would bathe their heads and necks for the relief it brought! No wonder that men rebelled, and wet their lips occasionally when the law said no! We had the pleasure of rowing once in the same crew with a man who told us that during the whole six weeks of training he had not drank one drop of *any thing!* Is it strange that a great abscess burst out on his thigh, and that he rowed his race while in such a fever that his physician had the day before ordered him home to bed? To be sure, he did more than was required of him; but could the system that encouraged such madness be right?

And, not contented yet, men have been known to think it necessary to bundle up unusually, and work until in a reeking perspiration, purposely to reduce their flesh; and, from personal experience, we can say that a more weakening process for the ordinary man can hardly be devised. This barbarous custom came from such wisdom as one found in *Boxiana* and works on training in by-gone days, and perhaps for the men it was meant for—prize-fighters, sporting-men, and their associates—it was well enough; for a hearty fellow, long used to loafing about bar-rooms, and by his unrestrained appetites adding daily to his weight a puffy, beer-soaked sort of flesh, might find his body none the worse for, and his sensual nature cooled by, heavy sweating between feather-beds, and by long walks and runs with top-coats wrapped about him.

But to nearly every man who trains to-day for a boat-race, and particularly here in America, where most young people at least find it easier to get thin than stout, much of this overheating is of no benefit, nor else than a positive hinderance to the effecting of their purpose. Take the clerk, the student, the mechanic, or the young professional man as you find him, and put him through the course of training as now followed, and the chances are more than even that he will gain weight or, technically speaking, "train up." This will be especially so if he has for a while back been using his muscles but little and his brain too much, or has been irregular or dissolute in his habits. But if he has been careful all along to take a good, generous piece of exercise daily, it hardly matters of what sort if it be out-of-doors, and sleeps plentifully, he will find his weight almost unchanged, particularly in the cooler times of the year. Had Dickens, for instance, with his six or eight or ten miles of daily walking, at a gait that it needed a practiced foot to long keep him company, taken a notion to extend his trip until he had walked all he could for a week together, it is doubtful, unless the weather was extremely warm, if he would have lost weight very perceptibly by the operation. In a tramp we once took from Boston to New York, covering the distance in five days, with three hours to spare, doing fifty-seven miles the first day and averaging forty-five throughout, only four pounds were lost, and reasonably good fare, such as would be found on any well-ordered training-table, would probably have saved us a couple of these.

The amount of work, too, that should be done by a man in training seemed all along a matter of conjecture, and one which no rule could govern. You would hear of one crew thinking it a hardship to have to row five miles a day, while another was scarcely satisfied with twenty. We understood that when Hamill was fitting for an important race he would not only often be on the water before breakfast, and always take a six or eight mile pull between that meal and dinner, and a similar allowance before supper, but quite frequently a deal of hard work at the rowing weights after supper. Not only is this manifestly too much even for a man of his great strength, but any where nearly as much is almost sure to bring on a loath-

ing for his work, which will quickly combine with such overwork to defeat the very purpose in view—the winning of the race.

Thoroughly hard, faithful work over an oar or rowing weight reduces one's flesh astonishingly. We have seen a man with little superfluous flesh on him, in a gymnasium just comfortably warmed, after stripping for his work to thin trowsers, slippers, and gauze shirt, and first weighing himself on the scales hard by, sit down to a fifty-five pound rowing weight, and, rowing a clean full-length stroke of about forty-five to the minute, rise at the end of twenty minutes—probably a fair approach to three miles of work at an oar at racing pace—and weigh on the same scales over a pound lighter. And after three miles of sharp work over the course "on time," under a blazing, mid-day sun, when the thermometer stood in the shade among the nineties—a time, by-the-way, when it would have been far wiser not to have rowed—we have seen six men weigh before going to dinner, and afterward turn the scale at an average of three pounds more per man. But they trained on sensible principles, and a goodly share of this increase was doubtless liquid, as men tired and exhausted can hardly help drinking, rules or no rules.

We hold that even to-day men in training are prone to do too much work. When the Harvard crew was in Europe, preparing for the struggle that by its result created such profound surprise, at least among all Englishmen—for the latter had expected them to be beaten from the start, instead of leading probably the best crew Oxford ever had for two whole miles—they would, besides a little walking, paddle about over two or three miles in the morning, and generally go over the track from Putney to Mortlake (four miles and three furlongs) at a racing pace in the afternoon; then, after lying on their oars a little while till they recovered their breath, would start back easily, and often swing into a stroke that gave the horsemen on the tow-path something to do to keep up. And for this they were pronounced by the English press perfect "gluttons" at work.

Their rivals, plumper, rounder, less wiry-looking men, and averaging sixteen pounds apiece heavier, would paddle but a mile or so in the morning, making frequent stops at that to listen to the comments of their "coach," and pull over the course "on time" in the afternoon, but instead of rowing back, give their boat in charge of watermen, and go home by the beautiful little steamer owned by one of them, and from which, as she steamed alongside them on their row up, their coach had given his orders in a voice you could hear almost a mile away. And although thus in the morning doing practically nothing worth calling work, and hardly more than half as much in the afternoon as their rivals, yet seeming better fit for it, their mentor feared that they were doing too much, and not long before the race let them up for a day, and had them down at Brighton for a tumble in the surf.

Here, then, in a country where the interest in rowing is so universal that, as its *Rowing Almanac* shows, the number of races often exceeds in a year even the number of days, where almost every aquatic problem new to us was solved long ago, with all the best light of the experience and traditions of more than forty years, and the pick of all the skillful coaches in England—here some of the very best men her justly famous and oftenest victorious university ever owned, men who looked fit for any thing, confine themselves, when preparing for the most important rowing race the world ever saw, to not more than twenty-five minutes of actual downright hard work each day! Is not the allowance they thus give themselves at least worth making a note of?

Moreover, the English students usually, if we are rightly informed, do nearly if not quite all their severe rowing at a season of the year when their studies exact comparatively little of their time, and thus the achievement of even the highest rank and honors are not, as has been more than once proved, incompatible with prominence on the river. But the American who wants to row a race, if he is yet a student, is very apt to find numerous examinations coming on at just about the time most convenient for the racing; while, if in business, he will attempt to prepare himself for his task after business hours, when he is of necessity more or less worn down by the labor and annoyances of the day.

Take a hot, hard pull of an hour or more, at a fast stroke, with scarcely any let up, and a keen, wonderfully plain spoken fellow up in the bow, or on the cockswain's seat, or riding close alongside, and ever paying his addresses, as you think, almost entirely to you and the defects in your work, and this in the presence of others who can see the fitness of his comments, or do fifty or sixty miles over country roads between daylight and dark, and it is a rare possibility that you will be ready that evening or next day to grasp swiftly some important and complicated question of business or study, and find your memory as ready and retentive as it would otherwise be.

With the explosion of the notion so long prevalent that a man who had an arduous physical task before him must get himself down almost as thin as he knew how, and with the discovery that a little extra beef helped rather than hindered him, and seemed a capital left him to draw on, particularly toward the end of a long race, has come the natural result that gives him such capital—namely, the keeping up the supply of

food and sleep that build him up, and the lessening of the work, and consequent wear and tear of body and nerve, that take him down. It has been found that he may eat about any thing he likes; for the trying work he has will so sharpen his appetite that he will like the most solid food, and as he is sure to eat plenty of it if it is set before him, any fondness he may have for less nourishing dishes may be safely indulged.

We have seen put together four midshipmen, averaging scarce twenty-one, and who had never had much rowing; and though required to turn out at half past four in the morning—for from six to six their duties demanded all their time—and forever nagged at, till their backs at last got straight, and they fell into some approach to form, they uttered no breath of complaint. Nor would many evenings go by without their having to pull at their best over three measured miles, and sometimes they did it in nineteen minutes. By-and-by Coulter brought down from Philadelphia the picked crew of the Schuylkill navy, and threatened to make short work with the poor rash middies, dropping occasional remarks in a patronizing way about this or that defect in their work, and referring to their tender years. But the latter kept their own counsel, and when the day of trial came dashed away from the enemy at the very start, and taking a commanding lead, kept it all the way over the course, coming in easy winners, four or five hundred feet ahead, and this though their bow-oarsman had cracked his oar while turning the half-way stake, and so was forced to do lame work all the way home. Well, they dined the vanquished soon after the race, and on the well-laden table their hospitality had provided were high glass dishes, broad, deep, and roomy, and filled with luscious strawberries. The Philadelphians were so attentive to these as to cause remark, when the fact came out that they had been for weeks fed on the old plan, and besides meat and bread, had eaten little else. But all this time the winners had had all the strawberries they wanted, besides tomatoes and whatever other vegetables were to be had, and so now cared nothing especially for them. The former had gaunt, hollow cheeks, and the generally overworked look that such narrow diet begets; while any one of their rivals had plenty of flesh on his face, and a comfortable, hearty look.

We found on the table of the English crew above mentioned plenty of fresh oranges, and large juicy grapes, while each man seemed to have about all the beer he wanted.

Almost invariably, too, crews trained on the spare plan are afflicted with boils, while after a careful observation of nearly all the best rowers, professional or amateur, this country has yet produced, and of many of the foremost oarsmen of recent years of the former, and not a few of the latter class, in England, and an experience of some four thousand miles of rowing and much racing during our four years at college, we feel confident that men fed on a liberal and varied diet, and not unreasonably restrained in the matter of unstimulating drink, are free from these annoying and often very weakening visitors. We say unstimulating drink, for it is pretty well understood that any thing else is a hinderance rather than a help to a man cultivating endurance. We record our belief that no other drink yet found will do the man in training, or at any physical labor, so much good and so little harm as cold water.

How should a man distribute his work and rest, if required to train for four or six weeks together for a boat-race of any length, starting on the supposition that he is in fair health and has no organic defect?

On rising, let him take a sponge-bath in tepid water, and be as quick about it as he can; then rub himself as vigorously as his hide will stand with coarse towels or strap until, if he can bear it, he is ruddy all over.

If he feels equal to a little exercise before eating, let him take it with such clubs or dumb-bells of moderate size as he can handle easily. But let it be only a very little, for a man who has eaten nothing for twelve hours is unfit for severe physical effort; and it had better be taken in-doors, especially if there is the slightest malaria in the air, or if it is at all cold without.

Then very quickly afterward he should have a hearty breakfast, and provided he will eat a good allowance of well and invitingly cooked beef, or mutton, or pork, or fowl, it matters little what favorite dish he may add, if none of them contain any stimulant. Particularly should he have whatever vegetables are then seasonable, and for which he cares, and have them served to his liking, while he can scarcely eat too many eggs.

From now till dinner-time, if that comes in the middle of the day, he had better not, save three or four miles of smart walking, do much hard work, unless his race is to be rowed during this portion of the day; for it is a capital plan to so distribute the day's work as it is likely to come on the important day itself. But two or three hours after eating, taking care to avoid exposure to extreme heat, let him go out for a paddle, and such instruction as suggests itself to a careful and experienced "coach;" for few men row so well that they need no teaching, and the best rowers will generally receive it most willingly. We say a paddle, for a man learning to row must never go fast. He wants first to get the point to be learned thoroughly into his head, and then it is easy work for his hands. But drive him, and row him hard, and he soon finds, as in any other severe muscular work, that it is very

difficult to think quickly, and it may take him months or even years to acquire knowledge that judicious management and restraint would have brought him in a few weeks. On his return to the boat-house he should have a good rub, and then at least half an hour's rest before dinner.

This should, of course, be the most substantial as well as the most attractive meal of the day, and the man should be allowed, as is often not the case, to eat all he wants; for surely he who takes much out of himself ought to be allowed ample material with which to rebuild. Together with the variety of meats already named, and adding game and fish, we repeat that he ought to have at least a sparing allowance of any vegetables in the market for which he has a liking. This will remove the craving that every one knows well who has trained, for instance, in strawberry-time, when he was not allowed to touch the delicious fruit. And we are ready even to go so far as, if he has a marked weakness for some favorite pie or pudding, to let him try that too, on condition that there is nothing stimulant in its composition.

If supper comes within three hours of bed-time—and tired men are not fond of sitting up late—meat had better be omitted, unless trial has shown the man that he finds himself better with it. But in the long list of simple dishes that can be prepared from wheat, hominy, oats, corn, rye, buckwheat, and a variety of inviting fruits, it will not be difficult without meat to make this meal quite palatable, while if the man is at all inclined to be thin, he need not be shy of the milk.

Then, too, it should be remembered that a person doing each day all the physical work of which he is capable soon finds his digestive powers wonderfully active, that he enjoys his food with a keen relish, and that, eat almost what he will, he will be conscious of no unpleasant feeling from it; and if he ever knew any thing of dyspepsia, he will wonder why he had not thought of this remedy sooner, so complete and effective is it generally.

Between meals nothing had better be eaten, the stomach thus getting adequate rest for the large amount of work it is called on to do.

Of course, if dinner comes late in the afternoon, a person doing much athletic work needs a stout lunch at noon. The Oxford crew, for instance, on the occasion already mentioned, dined after their afternoon row, and when, save rather a brisk walk for a short distance in the evening, their day's work was done; cold beef, bread, and beer, we suppose, being their noonday fare.

Although the sluggish feeling which is apt to follow a hearty meal and hard work may tend to drive one off early to bed, he will nevertheless find that he can sleep; while if he were not tiring his muscles so much, he could not. And in the matter of sleeping, we believe in falling back on one's common-sense just as well as in eating. Let the feelings dictate the time of retiring and rising; for if he gets all the sleep he wants, and feels thoroughly rested, even though it gets on to be nearly midnight before he turns in, he will, we take it, soon discover the fallacy of the old saw about one hour's sleep before midnight being as good as two after it.

No direct mention has been made of the afternoon row, the real task of the day. Waiting till his noon meal is pretty thoroughly digested, the man makes for the boat-house, and strips for his labor. For it will not be any thing short of labor before he gets back. After seeing to it that his boat and oar are all right, and the strap which fastens his feet to the foot-board just as he would have it, he starts off on an easy but careful paddle; for at no time should he ever row one single stroke in a careless or slovenly fashion, and by following this plan it will soon be easier to row properly than not. For the first days, and even weeks, this paddle should be gradually quickened, until he is rowing a steady, strong, and even stroke, and the coach should order him to stop as soon as he begins to show signs of fatigue. Not yet must he think of going at racing pace, for his heart must by gradual daily work be accustomed to beat with increased and unusual rapidity, and his lungs to the unnatural method of breathing that fast rowing causes. After he has rested a little, being sure to guard meanwhile against catching cold—for which purpose a thick flannel shirt should always be at hand—let him go again; and while reminding him of any glaring fault, yet not troubling him too often, let him understand that he has had no hard work yet to-day, and that you purpose being liberal in the allowance of it this trip, and that he is to have an excellent opportunity of showing of what he is made. Keeping him perfectly steady, pulling exactly the number of strokes each minute that he did in the preceding one, and always remembering that just praise will get more out of him than blame, eye him closely, and do not ease him up until he is showing something like distress. His back and legs may ache, and his fore-arms too, when he gets up next morning, but three or four days will carry all that off for good. Be sure that he is covered this time, for now he is tired and overheated, and in danger of at once catching cold. As soon as he has fully recovered his breath, let him row, but always carefully, back to the raft, and bestow such words of commendation as he may have deserved, and only such, upon him now right before his comrades, for they

will cheer him up and do him good, and make him half forget the strain he has just been making. But no syllable of blame, however deserved, should come now. By waiting until he has eaten his meal and recovered his strength, you can not only appeal to him and spare his feelings as well, but reflection meanwhile will have checked you from saying more than you may have meant, while you need never fear that he will not keenly appreciate your being so considerate. But if all other means fail, then coolly, firmly, but very plainly attack his faults on this home row right before his comrades, and the less frequently tried the more effective it will prove.

When within about two weeks of the time set for the race, and his wind is clear and good, and he is generally well-seasoned, take him to the starting-point at just about the hour he will have to row on the day itself, and send him away at the best pace he can hold for half the distance to be gone over, dwelling chiefly on the necessity of rowing a steady, unvarying stroke of full length throughout, and of using up all the strength he has. Then he can soon try the whole course, and let the coach accompanying him watch carefully how he is standing his trial, and whether he is doing his all. If not, let him, particularly on the last mile, call on him in the most effective way he can command, and even get spurt after spurt out of him, though he be ever so tired. For in a few days he will find to his delight that he is better and better up to these bursts, and that they seem to take less out of him than before. Moreover, he will get rid of the fear most men seem to have of this "rowing on time," and will find that there is always a little left in him when he supposes there is not. And when the struggle itself comes, and the agony of the home stretch, when his antagonist is perhaps a trifle ahead, he will remember that he has been in just such a tight place frequently; that it is a question of sheer pluck now; that if he is aching all over, and feeling as if there was not an ounce of pull left in him, and finding that his eyes will hardly keep open, so, too, is the enemy; and that now it is training and grit and blood and pluck that are telling; and far more likely will he be—thanks to the knowledge and self-faith that these same hard rows on time have brought him—to be equal to the mighty effort which will surprise and delight his friends and himself, and take him over the line a winner by a yard or a foot.

But suppose that he has thus carefully attended to all that will best build him up and fit him for the hour of trial, and that he has even passed safely through that hour, and, after an honorable and closely contested struggle, has come off the winner, has he gained or lost the more by the operation?

He had his heart set on an end to be reached by overcoming no inconsiderable obstacles; for steady, uniform, and careful attention to work, and faithful and conscientious effort from the beginning to the end, have often required much self-restraint, and taken him from some occupation far more inviting, while, with his blood unusually warm and rich, he may have found his temper and his tongue much more difficult to curb than ordinarily. He certainly has that satisfaction that the desire accomplished brings, and he is pretty sure to find with it an increase of collectedness and nerve, good spirits and self-respect, an ability to obey promptly, and a fair measure of his own endurance—this last, by-the-way, a bit of knowledge likely to often in after-life, if on the march, the battle-field, or the ocean, and in many another place besides, avail him much. He has, too, had that wonderful incentive to great effort, his friends about him all looking on, and he has had the intense gratification of winning before them. Of necessity he has led a life temperate, regular, and chaste; he has given his whole soul to one purpose, and left no stone unturned to accomplish it; he has found that he could do what both his friends and himself doubted whether he could; he has learned pretty well what can be done with a boat, both in smooth water and a stormy sea; he has found out how to take the physical measure of other men as well as his own, with a near approach to accuracy, and what moral and mental qualities as well are needed for protracted muscular effort; he has learned not only what will recruit and what dissipate his strength, but how and where to reserve or expend it; and should his after-life be sedentary, he will find an elasticity of constitution, when overworked and exhausted, to which he would have been a stranger had he never fitted himself for vigorous physical effort. "Tom Brown," for instance, told us that he thought a man could hardly exercise too much before he was twenty-five; that he himself had scarcely known ever since he was of that age what sickness was; and that he could go for a week together on three or four hours' sleep a night without apparent detriment, if he could be sure to make it up the week following.

These advantages named, and doubtless many others, have come to be his who has rowed a gallant race and won it, and very many of them, too, even if he has not won.

Now has he run any risks?

If he is a slender man, or not fully grown, or has more pluck than strength, or had some sudden indisposition on the day of the race, or if the distance rowed was greater than he should have attempted, we hold that he certainly has; and also that he has even if he is wanting in none of these re-

spects, and has often been equal to the distance.

We have seen a young fellow who had shot up swiftly devote himself incessantly to muscular development, broaden and deepen faster than any one would have expected, and, with all the pluck and spirit of relatives of his for whom nature had done far more, and who had earned and won a brilliant reputation at the oar, essay to row stroke of the picked crew of his whole university; and row it well he did, often winning too, and with an elegance and grace which come of nothing but long and careful effort. But mark the result. In less than three years the beautiful ruddy cheek that on the day he rowed so well was perfectly radiant with seeming health has now a bright red spot in its centre, with little color any where else; the neck is unnaturally thin, the eye too bright, and the whole look tells you that something is wrong. And, indeed, something is wrong, and very wrong. For not his stomach only, but his heart and lungs as well, have done their work so poorly that their owner has known mighty little of any approach to sound health ever since that time when he undertook too much; and one day a dispatch came under the ocean telling his friends at home that he was lying in a critical condition at Naples, and probably could not last forty-eight hours. He did, however, recover, and we believe is a tolerably well man now, but we doubt much if, could he live his life over, he would be found rowing any boat-races.

England had a man of such surpassing strength and staying power, largely natural, too, that he was known to walk twenty-six miles to a swimming match, take part, and win; that he rose swiftly from obscurity, vanquishing noted oarsmen, until he stood, not only in his time, but in the annals of the rowing world, without a peer, and this, too, by dint of this same enormous physical power and stamina—for his style was not the most finished or effective—and yet at twenty-nine years of age, at the top of his physical condition, on a day when he appeared unusually well, before he had gone scarcely a quarter of the six-mile course, he falters, flags, droops, his oar drops from his hands, and in the next minute he falls backward into the boat. "At a quarter to nine o'clock," says the London *Field*, "within two hours of the time when he had left the same house full of health and spirits, England's greatest oarsman passed quietly to rest, without a struggle, and apparently without pain, in the arms of the most skillful competitor he ever had, and one of his truest friends—Harry Kelley." And what ailed this giant who thus almost in a moment rowed his life away by the banks of the Kenebecasis? We are told that "the result of the post-mortem examination showed that Renforth's lungs were engorged with blood, and that his death was caused by overexertion, combined with great mental excitement. Dr. Jackson, of Boston, testified that no trace of poison could be found in the stomach of the deceased."

Now his was no suddenly acquired strength, obtained only by determined and tireless effort, with every appliance which art could lend to aid him to his purpose; but one look at his stalwart proportions and intensely resolute face told you that nature had been very generous with him, and had blocked him out to do easily deeds which would soon place him in the very foremost rank of all men who have justly deserved a name for physical prowess.

Renforth's was unquestionably an unusual case; yet the fact that affections of the heart are far from uncommon among men who have rowed many races, taken with the finding broken asunder after a hard run the heart of the famous Captain M'Grath, the swiftest hound in England, if the story was rightly reported, and the well-authenticated instances of the same thing happening to deer when they have fairly run themselves out, certainly seems to point to a rule that may hold good among the whole animal dominion, which is, in substance, that protracted and distressing exertion after one is thoroughly tired, no matter what ambition, fear, or other motive is spurring him on, is exceedingly dangerous.

On the other hand, many a man has rowed himself to a stand-still, or run till he reeled and fell, and has never found himself any the worse for it. But we apprehend that the danger is surest with the weak man of strong spirit, and that the burly, brawny fellow has generally too much phlegm in his composition to be in serious danger of overwork unless terribly driven, and then his great recuperative powers will soon set him right if exhausted.

The researches of Dr. John E. Morgan, physician of the Manchester Royal Infirmary, as described in his recent and very exhaustive work, *University Oars*, are most valuable in this connection. In 1869 he wrote to the 255 men then living who had rowed in any of the English inter-university races, getting replies from 251, and through the friends of most of the thirty-nine who had died he had also word, what he asked being, in substance, "Whether the training and exertion demanded of those who take part in the university boat-race are of so trying a character that in numerous instances the constitution is liable to be permanently injured?" He found that seventeen either described themselves, or were spoken of by their relatives and friends, as having suffered to something like the following extent: Of six of those now dead—five from consumption and one from heart-

disease—there is, at least, grave doubt whether their overexertion in boat-racing was the predisposing cause. Of five cases of supposed injury, one who rowed too young found a pain soon after in the apex of his heart, though he says he can now walk ten or twelve miles without any trouble, and has preached two sermons almost every Sunday for twenty years; still his heart is weak, though he has no organic disease. Three others did suffer, and seriously, from overrowing, the heart of one and the lungs of another becoming very much injured in a way almost directly traceable to it. Three more rowed when, from some ailment, they were not in fit condition to do so, and seem never to have been rid of the ill effects of their imprudence. Of the remaining three, all appeared to fare well during their rowing years; but the inactivity of a sedentary life since has brought the disorder of stomach in two, and of heart and liver in one, which they might have naturally expected from such a complete change in their mode of life, though vigorous exercise has since set one of them all right again. Dr. Morgan finds, too, that the longevity of the earlier Varsity oars compares quite favorably with that of less athletic men otherwise similarly circumstanced. Being first sure that the rower has no constitutional defect, waiting till he is at least twenty, training him carefully and thoroughly, and considerably abbreviating the ordinary race-courses, would go far, he thinks, toward avoiding the dangers mentioned. But which of these would have saved Renforth, or would help us to discover why he died when he did, and not earlier, for instance?

Again, while rowing allows and even invites a man to strip and let the sun in at his body—no trifling benefit, by-the-way—and while it tends to not only generally harden him, but often to make him almost amphibious, it is doubtful if it begins to be as beneficial as many another form of exercise. There seems to be an idea prevalent among persons not familiar with it that it expands the chest, but they are quite mistaken. A man may row for a lifetime, and find his chest not one inch larger for so doing. When oarsmen have broad chests, they will, we think, be found to have gotten them by some other means than rowing. Broad backs they can get, and probably will, until they soon look and are too broad for their chests—we mean not really their chests, but what is ordinarily called so, the front of the chest.

Nor does the average Briton seem to run as great risks from rowing as the average American, though neither begins to seize upon the facilities he might have for either fitting himself for it, or knowing its rightful place in his physical education. The former early accustoms himself to the downright hard work of foot-ball, and hare-and-hounds, wrestling and running, and by the time he is fifteen he is not only well grown, but also well developed, and often shows himself up to hard racing while yet at school, and before he is old enough for the university at all, while in the next few years he broadens and ripens into the well-set, sturdy representative of his country, so well known all the world over.

But the American boy starts in with tops and marbles, plays base-ball some, skates a little, and generally, at least if city bred, finds himself at fifteen slender, or at least thin, very likely studying too much, and any thing but fit for vigorous and sustained bodily effort. If he goes to college, he finds, on arriving there, one set of fellows working with all their might to get ready for the coming season on the ball field, and another for the river. If inclined to out-door sports, he falls in with one or the other, and, as the end they work for is near and plain, works well, and in the parts where he will need strength on his parade-day soon has it. But when a year or a few years older, what good has this temporary and partial development brought him? He is very likely to find, with the leaving off of his work, that his muscles are weakening and growing smaller, and, especially if he has overrowed or rowed hard when out of condition, that his heart also is somewhat out of order, and that his chest, which was never really strong, is not so now. At the gymnasium he attended while at college, or before reaching there, he found for an instructor some man likely enough a graceful gymnast or good boxer, but who had very crude notions of what each of his pupils needed to keep down effort with the parts already strong, encourage it with those that were weak, and round and harden each one into a symmetrical and well-knit man, good for almost any sort of physical test he might ever be called on to stand.

We have yet to hear of any gymnasium in this land, and of more than one in England, which has over it a man who begins to comprehend what could and ought to be done by one in his position. Harvard University, a while ago, for instance, was in need of a new superintendent for the one belonging to it, and to supply its want was making serious inquiry as to the fitness of an itinerant circus performer—an excellent gymnast, to be sure, but a man having almost no conception of how to impart his knowledge to others, and lacking many of the most important qualities requisite for first getting any one interested in his work, and then for encouraging him on; in short, about as fit for the post as Jem Mace, or some other notorious bruiser, would be to lead an army. And he was to take the place of an ignorant negro, who found his stipend so paltry that he was obliged to eke out an existence by giving

boxing lessons and keeping an old-clothes establishment in a neighboring cellar!

Such men as these may command respect, and fill their places well; but without doubt, if some one of the large sums of money which are not unfrequently endowing new professorships, and in branches which most of the students have neither the time nor the inclination to take up, were allotted to giving the gymnastic instructor a salary that would place him on a footing with his brother professors, a man could be had competent to maintain that footing in other respects; and he would be found, by getting directly at the physical wants of the whole body of students, and establishing a system which would meet those wants—and carrying it out too—to confer a benefit almost incalculable, and which, in a few years, would be felt wherever throughout the land any pupil of his had taken up his home.

Of course he should be a person of moral and mental calibre sufficient to enable him to command the respect of his pupils, and, it is almost idle to add, should fully understand all that any skilled surgeon does of the anatomy and physiology of the human body, as well as being a thoroughly experienced gymnast.

If gymnastic instruction were made compulsory and regular, the results under the teaching of such a guide would be swift and most gratifying; while, if even only elective, the fact that there was over at the gymnasium an attractive man, who knew to a certainty how to fill out a hollowed chest, bring a high shoulder down to its place, stouten arms and legs, rounding them into graceful symmetry, and who, in short, could tell almost on seeing a man what he needed physically, and show him how to get it—and show him, too, in a way which could not but be convincing—he would soon fill his gymnasium and bring himself to great usefulness, and if he would not also actually draw more men to his college, we are much mistaken.

Do we ask for a man impossible to find? Read what Archibald Maclaren, Professor of Gymnastics at Oxford University (to whom we are indebted for more than one idea set forth here), has to say in his admirable treatise on *Physical Education*, and we have little fear of the conclusion. If such as he were scattered broadcast over this land, wherever a gymnasium is found, it would not be long before we would hear fewer remarks disparaging to American physique, men when exercising would know what they were about, and what they were getting, and the just fears which exist as to what the next generation will be could be omitted.

Whatever has been said here that may tend to show boat-racing to be of questionable benefit is not meant to hold at all of rowing taken moderately, as a man would take to walking, for instance, and especially if with it he exercised in other ways, and developed his other powers equally. Now he is avoiding all the risk, and getting a large share of the good which racing would have brought him; and when we learn, as our English cousins did long ago, the value of a daily constitutional, we will be delighted to have this excellent one to put with our walking, riding, swimming, skating, and ball-playing. It can be had at so trifling a cost as to be within reach of nearly all, and if fairly tried throughout one season will need no further recommendation, such vigor and health will it almost surely bring.

Dr. S. Weir Mitchell well suggests that intense mental activity in confined in-door life came near taking from us our Lincoln, and did take Stanton; while the out-door activity which was forced upon Grant and Sherman, when they must have known at least equal overwork and anxiety, has saved them for us till now, and given us seemingly good ground to hope that they have each yet many years to live.

After we, as a nation, have once learned the virtues of the road, the field, and the river, we will be as loath to lose any portion of our hour and a half or two hours out-doors daily, let the weather be what it may, as we would our dinners, as Beecher is his sleep, or Bryant, at nearly eighty, his morning turn with his dumb-bells. And when we have once fallen into the habit of thus daily resting our brains—for, as Bismarck's physicians seem to know, active muscular work will often bring them quiet when sleep will not—and giving our bodies a chance, we will not only find the elastic, springy health that makes one fit for any thing, and the delightful fact that we are knowing but little of sickness, but also that the mental work done each day will compare very favorably indeed with any we accomplished in the days when the head had all the vitality and the body none.

DOLLY'S DAY OF RECKONING.

THE old house had been a grand mansion in its day. The rustic lane, shaded by century-old elms, once formed a carriage-drive up to the stately porch, which was now rotting down. There were great empty rooms, given over to spiders and mice, with the plaster falling overhead, and strips of paper dangling from the wall. A close, wild thicket had grown about the ruinous north wing. One or two of the outer doors were boarded up, and several of the windows had not been opened for years.

As the grand drive was fenced off, and the lawn divided into meadow lots, the old house now stood in the midst of fields. Every rain-storm sent rivulets through the roof, and

every high wind brought down some of the stones from its tall chimneys.

It seemed almost fortunate that Madam Dillingham had gone blind and deaf, had failed and faded, just in proportion as the old house went to rack and ruin. She had been a proud woman in her strength, but she was humble enough in her weakness. Many times a day she was put straight in her chair, and the tears even were wiped from her cheeks, because her old hands shook perpetually with palsy. She could scarce have heard the last trump, Mahala said; but her sightless eyes turned wistfully, and her head inclined in an eager, listening attitude, when the trip of Dolly's feet sounded upon the floor.

There were hours when the old woman seemed to make long halts at some half-way house between sleep and waking. Then Dolly was free. She had a favorite nook, high up in the crazy garret, where the flooring trembled with every step, and cobwebs spun themselves down from the dusty rafters that met the head in unexpected places. Numbers of forlorn garments hung, like Blue-beard's wives, in a row; and there were quaint hair-covered trunks, studded with brass nails, the lids half off, and bulging with musty old papers, in which mice made a dismal rustle.

Dolly had placed an infirm arm-chair, with tags of faded brocade clinging about it, before the one dim window, and there she sat, looking down, like a swallow from its nest, on the woods and fields once owned by her forefathers, but of which she did not now possess as much as she could cover with her little palm.

Just over her head hung one of her aunt Janet's poke bonnets, trimmed with a bunch of feathers, which moths had long since consumed down to the very quills. There was a memory of Janet Dillingham's beauty and pride still lingering in the minds of aged people, who could recall when the old squire was the freest liver in the county, with real solid silver loading his table, and wine flowing like water. But Dolly had never been able to fancy the heiress Janet alive and young, with pulses beating like her own, until, one day, she fished out of an antique chest, from among theorem pictures, tambour-work, old music-books, and samplers, a packet of her great-aunt's love-letters, yellow and musty from age, and tied with a melancholy bit of green ribbon. They were written by George Boardman's uncle Hubert. Dolly had heard the story from the lips of old Mahala—the story of a poor young man stabbed to the heart by a proud woman's scorn. Hubert Boardman had died of a malignant fever; but there were plenty of people to believe that Janet Dillingham killed him.

The Boardmans were poor enough in those days, but they had steadily risen in the world as years went on, while the rich old family had as steadily gone down. All the grandeur left now clung in the form of a little tarnished gilding and a few tatters of brocade to Dolly's chair. Mould and lichens spotted the walls, and wild leeks and tufted grasses waved from the roof. The old house appeared to sink into the ground several inches a year; and well it might, for it was little more than a grave.

Besides the paralytic grandmother and Dolly, there was only Mahala Skinner, a lean, parchment-visaged old woman, who had grown decrepit in the service of the decayed family, and had as many aches in her bones as there were leaks in the roof.

Such surroundings, and so little joy in life, would have made some people dismal, but Dolly was proof against low spirits when bees were diving down into the honey-cells, and birds singing in the leafy lane. Summer held high carnival now, and self-sowed morning-glories were starring the wilderness of the garden, which had grown up to docks and tall mustard-trees. Slice after slice of the old place had been purchased by the Boardmans, until their line came under the windows of the ruined mansion-house, where sleek cows were cropping the rich herbage. Dolly knew that she and the poor old creatures in her care had consumed the proceeds of a wood lot, and one or two small fields, and she knew, what it was harder to know, that her reckless father had wasted the greater part of a fine fortune before dissipation carried him to the grave.

Dolly often sat in her perch with her aunt's musty love-letters lying loose in her lap, living the old story all over again in her fancy, and thinking with a tender pity of the young man who had let his heart waste in passion and longing, like a bit of incense burning before a cold white marble altar. It was natural, perhaps, that Dolly's thoughts should stray from the dead-and-gone uncle to George Boardman himself, who seemed as oblivious of her existence as if she had been a little wren twittering at the top of one of the elms down in the lane. He had been absent for years, either at school or with a relative living in a distant part of the country. But now he was at home busying himself with the farm, and the great factory, Boardman's Works, they called it, that smoked and rumbled all day and half the night down on the flat. Dolly could hear his step ring bluntly down the lane, and the short, positive orders he gave his men; and yet the words were always pleasant, though the tone might be a little imperious, showing he meant to be obeyed. The young man had a dark face, clear cut if not handsome, and a way with him, as Mahala expressed it, as if he thought he could make the sun rise t'other side by saying so. To the old wom-

an it was sad and strange to see a Boardman ordering where the Dillinghams had so long had their will.

Mahala's dark kitchen, with its smoky walls and patched window-panes, resembled a cave, and the old woman, as she bent over her work at the fire, seemed to be brewing witches' broth. She was grimly religious, however, and had a habit of shrilling out warnings and admonitions in a high-pitched voice.

One morning Dolly walked into her den, and found Mahala, with arms akimbo, gazing sourly into the kneading-trough. "We've come to rye and Injun," said she, almost as if speaking to herself, "and it won't be long before we come to the bare boards."

"I like it," returned Dolly, cheerily. "It's healthier than white bread, and I shouldn't wonder, Mahala, if you grew fat on it. But we must scrape a little flour now and then to make grandma a white loaf."

"Oh yes," said Mahala, wrenching her shoulders; "it's allus scrapin' and connivin'." (She meant contriving.) "Oh, my bones! How long can human nature hold out?"

"But you know how helpless grandma is," coaxed Dolly. "It would be useless to try and make her understand things. She has always had a silver spoon and a china cup, and you have tended her as if there had been a mint of money to go to. You have been as good and kind and patient as an angel—you know you have, and you needn't try to deny it."

"Hush, child," said the old woman, with a sort of unlimbering of her shrill voice, which showed her heart had been reached. "Don't try to make a merit of what I have done. I'm a poor worm of the dust, vile and sinful too, unless helped by a higher power. But you take no more care than the flyin' swaller. You'd starve yourself, and slip the bit of meat back on the plate unbeknown, as if it wouldn't choke me to taste a mossel of what should go to nourish you. If the sun shines, you never realize that the vials of wrath are poured out, and there's a judgment hangin' over this house."

"I don't see the use of making myself miserable," said Dolly, a little dejected by having the duty pressed home upon her. "It wouldn't send us bread or meat."

"But it looks like flyin' in the face of Providence," piped Mahala, "for you to go singin' round like a lark when there ain't even potatoes for dinner. You don't heed the warnin's. This old house is doomed; and I've thought, many a night, when the wind was screechin' round the chimbleys, it wouldn't outlast my time, or the old Madam's. It don't sinnify about us, for we've both feet in the grave already; but you are young, and have got long to stay, and there's one thing you might do: make a good match for yourself, and get a husband to give you comfortable victuals and clothes."

"You talk as if I could make a match as you make a loaf of bread with milk risings," retorted Dolly. "Shall I go out in the road and ask somebody to marry me? No one has ever offered but the little lame schoolmaster down at the Corners, and I should have to nurse and take care of him. When I have got you and grandma already on my hands, I don't feel as if I could afford to support a husband. Girls are weak, useless creatures. Oh, I wish I were a great strong man, six feet tall, and with a beard! Don't mope, now, Mahala, and go about singing that dismal hymn:

> 'And are we wretches still alive,
> And do we yet rebel?'

See, it has cleared off beautifully, and the grass blades sparkle like diamonds. I am going out to pick strawberries on the interval, in spite of the notice Mr. Boardman has stuck up warning off trespassers."

"Your grandfather owned that medder lot," groaned Mahala, "when the Boardmans was as poor as Job's turkey, and now, child, you'll go there as a beggar. I've seen as much wasted in this house in a day as by good rights would last us a month; and if it hadn't been for them as forgot to keep the fear of the Lord before their eyes, and to do works meet for repentance, you would be wearin' your silks and satins, and beaux would come and hitch their horses to the gate, as they used to in old times, and there'd be plenty to praise your purty face."

"Oh, I am just as happy in a faded calico gown," responded the incorrigible Dolly. "It seems to me like a child's seesaw. First you go up, and then you go down. We are down now, but it's only our luck. If the heart is brave and cheery, what difference does it make whether we live like a little bird in its nest of sticks and straw, or like a king in his palace? For my part, I would rather be the little bird. I wake up in the night, Mahala, and think of that great Love that holds us—so grand and beautiful! It won't let us drop out of its arms any more than a mother will let her baby drop out of her bosom. Now cheer up, and don't preach any more;" and Dolly ran and gave her ancient handmaiden an embrace, though it was much like squeezing a bundle of fagots.

Then she took a tin bucket from the dresser shelf, and tied on her shabby hat; but something remained to be done. She must straighten up the old grandmother, who had fallen into a shapeless bundle, and shake her pillows, and pat her pathetic old hands, and coo some affectionate sounds into her deaf ear to bring a little gleam of joy to the withered face and sightless eyes.

Dolly was off, speeding like a bird, to the

meadow. And such a meadow—broad and level, rosy-tipped with clover, and when the wind was still, standing tall and stout in grass between the walnut-trees on one side and the blue river on the other. In the midst grew a black cherry-tree that spread its branches like a tent, and about its roots the strawberries grew thick and fine.

Dolly's hat had fallen off, and the masses of her gold-colored hair unrolled and scattered themselves over her shoulders. From her little shelter in the grass she could peep out at the sky, and hear the wind singing glad psalms in the big tree. Bees came about smelling at clover tops, and butterflies fluttered their wings over her head, and pewits and bobolinks piped loud and clear. The berries were plenty, and Dolly's nimble fingers grew rosy as she made them rain on the bottom of her tin bucket. She had picked her steps carefully through the grass, but ere long there came a short fierce bark, and a great dog rushed upon her and trampled her gown.

"I warned you to keep out of my grass," said a wrathful voice; and Dolly looked up and saw the dark face and angry eyes of George Boardman.

She got upon her feet, the golden hair rippling down to her waist, a burning color flooding her cheeks, and her little rosy telltale hands clasped together.

For a moment George was quite dumb with astonishment. "Pardon me," he stammered; "I didn't dream of starting up a young lady, or, rather, a fairy. I thought I would let Nap frighten the lads from the mill cottages yonder. They come in here every day and trample my grass remorselessly. Nap is a rough fellow, full of play, but he wouldn't harm a fly."

"I am sorry if I have done mischief," said Dolly, penitently; "I only came after a few berries for my old grandmother."

"Like Little Red Riding-hood," returned George, with a smile; and when he smiled his eyes were very pleasant. "You must have thought Nap a big wolf that meant to eat you up."

"Oh, Nap knows me," said Dolly; "I wasn't afraid of him."

"But you were a little afraid of his master. He is a ferocious fellow, and inspires those who know him with terror. But Nap has decidedly the advantage of me if he has already made your acquaintance. Lucky dog, I quite envy him."

Nap was now rubbing his shaggy coat against Dolly's dress, and slavering and mouthing her hand with every sign of trust and affection. Dolly blushed, as she stooped down to pat him, and said, "Don't you know me? I am Dolly Dillingham, down there at the old house."

George looked in his surprise as if he would like to whistle, but he stood stock-still for a moment, as was his way. He had taken off his hat, and disclosed a compact head, covered with crisp curls of dark hair. "I can hardly credit it," he said at last. "When I went away you were only as high as my knee, and now you are an exquisite young woman—in a very shabby gown," he thought, but he did not utter the words aloud.

"I was a wild little thing in those days," responded Dolly, in the extremity of her embarrassment, hardly knowing what she was saying.

George hesitated a moment, and then said, very gently, as if alive to the delicacy of the theme he had ventured upon: "It would be a pity if this meadow should be barred against you. Not so very long ago it all belonged to your family. If you and I had lived only a few years back I might have come trespassing on your ground, and picking your berries. Do you think the rich Miss Dillingham would have been very hard on a poor fellow?"

"No," stammered Dolly, with a vivid blush, as she recalled her aunt Janet's love-letters. "I should never have put up a board warning people off the ground. I should even have let the mill children come in as often as they chose, for the poor things don't have much pleasure."

"But, you see, if I let every body into the meadow," responded George, "my grass would be spoiled, and I am rather a selfish fellow, apt to look sharply after my own interests. Still I must beg your pardon, and to show how sincerely I repent my rudeness, I am going down on my knees to help you fill your pail. Nap, in his rough play, has knocked over what you had already gathered."

In a moment George and Dolly were at work under the tree, with snowy clouds sailing overhead, and sending down vivid spots of light and shade, and the blue river murmuring softly over its pebbles. A strawberry patch is a good place to grow intimate and confidential on short notice. They were soon on easy terms, and two or three times George's brown hand happened to touch Dolly's rosy fingers as she was putting them into the pail, and she drew them back with a little flutter.

"Isn't it dreary living in that shell of a house," inquired George, "especially winter nights?"

"One gets used to the dreariness, and don't mind it," answered Dolly. "What some people would call hardship I scarcely heed at all, because it is such a blessed thing to feel young and well and alive all over. Not but what I have my troubles and worries;" and Dolly gave a little half sigh. "Mahala, the old woman who brought me up—that is, if I ever had any bringing up—is the best creature in the world; but she will sing dis-

mal hymns, and talk about the day of judgment. And poor grandma is so helpless she must be fed and lifted like a baby. But I dare say there are many who have more vexations than I have, and I won't make myself miserable and borrow trouble before the time comes."

"I remember your grandmother," said George, his voice a little softened, "when she was a tall, grand-looking woman. Her foreign birth gave her the title of Madam among the country people, and her snow-white hair and piercing black eyes made a picture not easy to forget."

"She is deaf and blind now," said Dolly, "and her mind has almost faded out. She fancies things are unchanged, that the old servants who have been dead for years are still about her, and that she could ride in her coach if she chose. She was prouder than a born Dillingham, they say; but I don't believe I take after either side of the house. I could go and live like a little wren on a bush, or a gypsy under the trees."

Nothing was heard for a moment but the rustle of the wind in the grass and the lisp of the river. "If you ever do go for a gypsy," said George at last, "I wish you would let me go with you. How jolly it would be to pick berries together every day, and boil the kettle for our supper!"

Dolly jumped up and said the pail was full; and George got up too, looking not very happy to find his occupation gone. Together they breasted the waves of grass that came to Dolly's waist as far as the fence, which was high and stout, made of three-cornered rails. George vaulted over, and Dolly ran up the side like a squirrel, trying her best to hide her shoes, which were a degree shabbier than her gown. George held his arms, and she jumped lightly down, with her face one moment quite close to his. She released herself, blushing prettily. These were trifling incidents, but they strengthened the bond of amity which had been formed under the cherry-tree.

"You are a household of women, and we of men," said George, as they sauntered through the leafy lane side by side, "and that is the reason we have never met. My brother Sam is soon to bring a wife home to Beechwood, and then I think I shall build a nest of my own. You see that pretty hill yonder with a grassy slope down to the river, and trees dotted about. Won't that be a nice perch for a cottage smothered in roses and honeysuckles? But you must let me come and take a peep at that quaint old garret of yours, and my uncle Hubert's love-letters." The two had in some way got upon Aunt Janet's story. George knew it already, for there were people who believed the fall of Dillingham pride a natural sequence to that sad little romance.

"I wonder if my uncle was at all such a fellow as I am," said George, stealing a glance at Dolly's downcast face. "They say he was so heart-sore he never recovered from his disappointment; but I am too obstinate to die of love, though I suspect it might give any of us an ugly wound. But you must let me see the letters," he added, after a pause. "I may want to borrow them, for I shall be writing love missives myself some day, perhaps, and it will be well to take a few lessons."

"Oh," said Dolly, artlessly, "if you love some one with all your heart, you will not be at a loss for words to tell her so. It will say itself, just as a bluebird sings."

"Indeed," responded George; "and suppose I should marry that same lovely and charming somebody—for, of course, she will be lovely and charming—and take her to live in the cottage on the hill, will you come and visit us?"

"I may be going to work in the mills then," replied Dolly, evasively. "I shall go and engage there as soon as grandma gets so that she does not fret to have me long absent."

"Then you will see us in the evening, when you come home weary from your work, sitting up there in the cool, shaded piazza. Won't that be refreshing?"

There was something peculiar in the tone in which these words were uttered, and Dolly did not try to study her companion's face. She went down the turning of the lane, and nodded good-by. George strolled back, whistling low to himself an old love-song. Then he did what it was rather odd for such a practical, hard-headed young man to do—sat down in the grass at the lane's end, within sight of the ruinous old mansion-house, and pulling his hat over his eyes, thought of all the changes that had marked the spot, and linked it with his own fortunes, and dreamed of many things, until long shadows fell athwart the fields, and the cows came wending homeward.

Mahala was in the doorway, shading her bleared eyes from the low sun's rays, and when she saw Dolly come tripping along through the tangled and weed-grown garden, she lifted up her voice in its shrillest accents:

"What on 'arth has kep' you so late, child? When you hear what's happened I guess you'll take a realizin' sense of things, and not go on thinkin' you was born like a phœbe-bird on a bough. Why, the old cow has gone dry, and there is your grandma like a month-old baby dependin' on her drink of milk."

"Dear, dear!" said Dolly, in a distressed tone, sitting down among the nettles and burdocks about the door-step. "I wish she hadn't gone dry just at this time. I wish she had waited a little while, and kept on."

"Kep' on!" repeated Mahala, impatiently;

"as if it was the old cow's choice to give milk or let it alone. You don't know any more about cow natur' than you do about human natur'. The poor old creetur has gone dry for lack of nourishment, like most every thing else on the place; and I want you to wake up to the fact that it looks as if we should all be trudgin' off to the poor-house, at least them as can hobble."

"What is the use of waking up," said Dolly, softly, as she sat with a far-away look in her eyes, and her chin dropped in the hollow of her hand. "Wouldn't the old cow have gone dry just the same if I had been ever so dismal?"

"Oh dear!" groaned Mahala; "a body might as well talk to that blush-rose blowing down there by the gate as try to make you realize what a world of sin and sorrer we've been born into."

Dolly did not sleep very soundly that night, in spite of her young light heart. She was up betimes to wait upon her aged grandmother. She washed her withered face, and gently combed her long white locks, with words of endearment. Mahala had set out the breakfast, the strawberries of Dolly's gathering, and a pitcher of fresh and foaming milk.

"Why, Mahala," she exclaimed, "I thought you said the old cow had gone dry. Where did this milk come from?"

"Mebbe it was a merrikle," replied the old woman, with a wry face. "Hain't you heard how in old times manny came down from heaven?"

"Yes," returned Dolly, "but I never knew that it rained milk even in those days."

Mahala maintained a dogged silence, until Dolly quite lost her temper. "I will know where you got the milk," she said at last. "You must remember I am mistress in this house."

"That's the real old Dillingham spirit," cried the old woman, her brown and wrinkled face lighting up. "There's a spark of it in you, after all; and I like it, child. It is the way Miss Janet used to queen it among her beaux, when Hubert Boardman was ready to get down and kiss the print of her shoe. But what's the use of making such a fuss about a taste of milk? I couldn't hear the old Madam go moaning for her sup; I couldn't do it so long as my old bones held together. And there's all them Boardman cows standing up to their knees in rich feed in that pasture ground that used to belong to the old squire, and was the same as flung away. I try to go by the rule of Scriptur', but I've never found any thing between the leds of the Bible that forbids to take back some of what was your own."

Dolly met the old serving-woman's sophistry with a look of amazement and horror.

"Oh, Mahala, you don't tell me you've been milking other people's cows? We have not come to stealing, I hope. I would sooner beg."

"That's all the thanks I get for standin' by till death," piped Mahala, as she flung out of the room. "I might break all the ten commandments, and my heart besides, to serve ungrateful folks, and get nothing but hard words for my pains;" and the poor old creature put her face into her apron and indulged in a hearty cry.

Dolly fed her grandmother the strawberries and milk with eager and tremulous haste, but ate nothing herself; and when the old madam was settled for the morning in a condition of senile repose, she sped away over the grass that let the dew into her leaky shoes, as far as the lane's end. There Dolly stopped and waited, leaning against a pendent elm that cast cool shadows, and looking down the way of the still fields, with glimpses of the blue river seen through the lacing of its silver willows.

She had not long to wait. There soon came the sound of Nap's short, eager bark, and of a quick step ringing against the flints, and a very musical male voice whistling *Annie Laurie*.

The tune suddenly dropped into silence, and was followed by "Good-morning," very pleasantly spoken. "I was just wondering if I should ever again come across a fairy in the daisies and clover as I did yesterday."

"I ran out on purpose to meet you," said Dolly, with her straightforward, innocent gaze, "and I have a confession to make."

"I am flattered that you should want to see me for any reason," said George, smiling, "but I didn't know that fairies ever had such disagreeable duties to perform as confession implies. I thought it was their business to dance and sing and lie in the cups of flowers and swing on long grasses."

Dolly half sighed, and then she told her little story in the simplest words, concealing as well as she could the depths of poverty to which she had come. George sat on a rail, and switched the white-weed with his stick, looking quite inscrutable, though something in the dark eyes seemed to say, "How unconsciously good and sweet you are!" The lights and shadows rippled over Dolly, and brought out golden gleams from her hair, and threw lovely tints upon her cheek and neck; but her eyes were cast down at the toe of her old boot, which was pushing itself into the clay path.

"I absolve you, my fairy," said George, when it came his turn to speak, "as absolutely as if I were your father confessor. And I must say, in my purely uninspired character, that I consider that old servant of yours a trump. Had I been in her place, I should have done just as she did, or worse; and I don't call myself a bad fellow. Look you, Miss Dillingham," he added, "suppose

we do a stroke of business. Dispose of your cow to me. I am in need of just such an animal, to fatten for beef, and she will be worth a great deal—I can't pretend to say how much. I will turn her out to good pasture, and she will become immensely valuable; for besides the meat, there will be hide and horns. We won't fix the price, at present," George went on, in his masculine way of settling things according to his liking, "but I will have my Alderney driven around to your back-door every night and morning. Do you see the pretty dappled creature down there by the brook, with a wisp of clover hanging to her mouth? Don't think you are getting the best of me," he said, hurriedly, in answer to a doubt in Dolly's eyes. "By-and-by there will come a day of reckoning; for I am a selfish fellow, hard at a bargain, a regular Shylock, that will have things just as they are set down in the bond."

George had such an easy, off-hand way of disposing of things, Dolly knew not how to put in a protest. The bargain was struck that morning, and a change for the better gradually came over the old house. Various comforts, even luxuries, began to find their way thither. Now it was a basket of choice fruit, and now a pair of fowls, or a few bottles of wine, for the old Madam's use. Dolly was confused and overwhelmed, and her heart beat too fast to allow of her finding out whether she were glad or sad. She seemed sometimes to hear her aunt Janet's decayed finery up in the old chest rustle with scorn at the consciousness of what a Dillingham had come to. She was no longer the careless child, who could sing all day because the world is fair. A softer womanliness touched her cheek, and made her eyes dewy and tender. Dolly was living a sort of poem in those days, when the meadows were pied with hay-cocks, and the old garden overrun with roses, and the lane buried in dense foliage; and yet she thought far enough ahead to see that it might end in sobs and heart-break. From where she sat, curled up in her old chair in the garret, she could hear the strokes of workmen's hammers. They were building George Boardman's new house on the hill. He had asked her to go up there with him, and view the arrangements—his plan for a bay-window, looking eastward over a wide stretch of country, and the western piazza, that would have the sunset and the river and its willows. George had consulted Dolly about his flower garden, and where to build a summer-house and train vines. He had paid great heed to her opinions, but she went back to the old house, remembering what he had hinted about bringing a wife home at their first meeting.

It so chanced that George and Dolly were always encountering each other. She could not set foot in the garden, but what Nap's glad bark would ring out, and young Boardman would vault over the fence from his own ground, and be at her side in a moment. Mahala's face changed its curious wrinkles; and a sense of pleasantness and comfort, like the fragrance of hope, seemed to creep into the old Madam's shattered senses.

The young people strolled in the lane when moth-millers were flying through the brown dusk, and the summer moon rose large and red behind the hay-stacks and line of dark cedars, and the air was full of half-lights, and sweet, faint perfumes. They talked over the old story, that seemed to knit them together with a thread of romance, and the past and present were strangely mingled. If George Boardman had been the humble suitor gazing at the woman, like a star high above him, his eyes could not have been more adoring and love-lit than they now seemed while bent upon the young girl at his side.

Weeks passed away in a blessed dream, but at last Dolly awoke to the consciousness that August had come. The hay harvest was over, crickets chirped around the smooth-shaven meadows, and the pretty cottage on the hill was almost finished. A new habit of reflection had grown upon little Dolly, which was almost pathetic. She often sat musing up in the old garret, with her chin dropped in the hollow of her hand, and that far-away look growing and growing in her eyes. She had been thinking of all that might happen to her, and the result was that one morning she went out to seek her rich neighbor as she had gone before. It was a still, hot day, when the massed foliage of the lane seemed painted upon a gray sky. Dolly had seen George moving along the river-bank with his fishing-rod. It was there she found him, down on his knees, getting his bait ready. He looked up at sound of her footstep.

"I am glad you have come out-of-doors at last," said he, half petulantly. "I have been waiting and watching a whole hour, and was getting disconsolate and low-spirited. Not a window has been opened in the old house this whole morning. I had half a mind to storm it, for it looked like the palace of the Sleeping Beauty."

Dolly pulled a stalk of grass, and stood and twisted the leaves.

"I came about that business, you know," she began, in a low voice, while George on his knees stealthily studied her face. "You spoke of a day of reckoning once, and I think it is quite time for it now. I am sure we have had far more than the value of old Whiteface. You have been very generous and considerate, but—but—we couldn't live on charity."

George's dark eyes grew dim with some unexplained emotion, but his tone had a

touch of sad impatience. He got upon his feet, and said,

"Would it be charity, Miss Dillingham, to take a few trifling presents from me? Does your pride revolt at that?"

"No," faltered Dolly, in her agitation plucking nervously at the grass again. "Pride has nothing to do with it." But she did not attempt to explain the feelings which were actuating her, only added, "Things must not go on so any longer. Try, Mr. Boardman, to put yourself in my place."

"I can't," responded George. "It is impossible for a gruff, bearded fellow like me to fancy himself in the place of a lovely young woman."

"Don't," said Dolly, softly, averting her face, and increasing the distance between them by a step or two. "You know what I mean. We must come to some sort of an understanding."

"Don't you understand me, Dolly?" He called her Dolly involuntarily, not knowing it. "Haven't I made every thing plain to your comprehension, and why can't you trust me? What is the good of a light-hearted, happy girl like you beginning to worry and borrow trouble, and look on the dark side—one who has been so brave and patient and cheery, too, under every sort of depressing influence? What has come over you, Dolly? I have told you that I am a hard man, not likely to allow any one to take advantage of me; but if I did not do all that is just and honest and true-hearted by you, Dolly, State-prison would be too good for me; I should be a scoundrel. There need be no money matters between you and me. If ever I have a wife, and live yonder on the hill, you shall settle it with her; and if she is exacting and unfair, I will refuse to love her."

Dolly's brain was in such a whirl that she seemed not to hear any thing but the end of the speech. George had delivered it with his face and eyes in quite an eloquent glow. "As I deal with you, so may God deal with me," she thought she heard him say; but the tones sounded cold to her fancy. She was not in a state to hear or heed his meanings.

Dolly walked away almost mechanically. She felt ill, and stopped by the bars that led into the lane, and supported herself against them for a moment, wondering, in a vague sort of way, how the birds and blue sky and growing things could ever have made her happy. There was a dull aching in her head, and the words went dizzily round and round in it, "Make terms with George Boardman's wife—humble yourself to George Boardman's wife."

Old Mahala complained less of her bones, and sang hymns a shade or two less dismal than ordinary.

"Do you know, child," said she, somewhat elated, as Dolly entered the room with a jaded step, "I've been thinkin' that though the old house has most rotted down, and the sleepers and under-pinnin' ain't no better nor touch-wood, and the loft over the kitchen part trembles when you put your foot into it like an ager fit—I've been a-turnin' of it over in my mind that the old house will last out another weddin'; and when that's over, it's best my old bones should be put away out of sight, and not cumber the top of the ground any longer. Sakes alive! to think of seein' a Boardman took into the family! But times have changed since Hubert Boardman used to go away through yon gate, haugin' his head, and lookin' like death. The shoe pinches on t'other foot now, and mebbe they think they're condescendin' to mate with us. But the young man is civil-tongued; and if ever I did see any body's eyes and heart set on winnin' a girl, it's him. He's got forecast and kalkerlation, I'll warrant, or he wouldn't have gone and built that cottage on the hill, that's Gothicker even than Sam Lawson's new house. Nothin' like havin' the cage ready afore you ketch the bird."

"You are mistaken," sighed Dolly, as she sat wearily down. "He has not thought of me at all as you suppose he has. Some one—I don't know who it is—will go up to the cottage one day as his wife. He has the same as told me so; and he only meant to be friendly and kind. Don't get notions into your head, Mahala;" and Dolly's voice faded out.

The old woman stopped ladling the soup over the fire in extreme astonishment.

"I may be a spavined old creetur," she piped, tremulously, "but I guess I've got sight and sense enough left to know the signs of love-makin' as plain as the symptoms of measles after they've broke out; and if he's been courtin' and promisin' somewhere else, he's a viper, and the Lord forgive me if I don't tell him so to his face. I took notice you was gettin' thin, and refusin' your victuals, and, thinks me, it's all along of the symptoms, and will come right in the end. Oh, the thief, to steal the heart of my lamb! I'd 'a throwed his dratted presents out o' winder if I'd guessed what he was about. It's hard to think the cloven foot was hid under his plausible ways. But he'll be punished as there's a righteous Judge that minds the fatherless and the widder. Oh, my birdie, I'd make a nest for ye in my old arms that was your first cradle!" and the old woman rocked herself back and forth in quite a passion of grief.

"He shall be paid all we owe him," said Dolly, in quite a firm voice. "But if you love me, you will never speak to him of my affairs. You know you have often preached to me, and told me I ought to be more serious-minded, and now I think I shall never

seem the same frivolous, thoughtless girl I once was."

"I didn't mean it, child," cried Mahala. "I'm a cross, ugly, hectorin' old thing, and when the wind's contrary the smoke will blow down chimbley. I couldn't hold my temper with an angel—'deed I couldn't; and it was all the comfort I had to hear you go singin' and whistlin' round the old place."

She had taken the pretty drooped head in her arms, and pressed it to her withered bosom, and was crooning over it in some almost forgotten way, as if to soothe a grieving baby.

"My dove, my lamb," she murmured, "I'd pluck the heart out of my side to save you a pang; and woe be to him who has given you this hurt!"

That same afternoon the man from Boardman's arrived with a brace of ducks. Mahala sent him off as full-handed as he came, and with a bee in his bonnet. Dolly heard her high piping tones where she sat, listless and pale, with the packet of her aunt Janet's love-letters lying in her lap. One or two she had opened at the tender creases, and the faded letters seemed to throb and pulsate with new life. All the agony and hopelessness shed upon those drops of ink by a dead hand were alive and quivering in Dolly's heart. She thought in a vague way of the revenges of time, and wondered if Hubert Boardman, wherever he might be, knew and was glad that the old story had been relived, bringing heart-break to one of the old, proud, fallen race that wrought him such woe.

At noon of the same day George mounted his horse and rode away on a short journey. Dolly did not know this; how should she, poor child? She was listening unconsciously through the hot heavy silence for the sound of his voice or his step, or Nap's bark, in the lane. Her heart was hungry for a kind glance from his eyes, the touch of his fingers laid upon hers, the sound of his voice when he was in one of those gentle, playful humors that made him a delightful companion. Two days wore by, each more insupportable than the last. The nights were pulseless, without a breath of fresh air creeping through the trees. Dolly could not sleep. She flitted about those hollow rooms like a little, wan, sad, restless spirit while others slept. It was the third and last night, and while the old clock in the kitchen was on the stroke of twelve Dolly listened at her grandmother's door, and then crept up to the garret in the dark, and curled herself into her favorite seat, looking down the way of the night-shaded lane, where she had so often walked and talked with George in the gloaming. Then for the first time Dolly shed passionate tears, that must have relieved her overcharged heart. Worn out and exhausted, she fell into a heavy sleep. How long she slept she never knew, for she roused herself at last with a sense of suffocation. A deadly breeze was blowing upon her through the window, which was lit by a strange glare. She looked down at the grass blades glistening with a lurid light. There was a storm of smoke and cinders surging around the angle of the old house from the direction of the sheds. No one ever knew for certain how it happened, but it was conjectured afterward that Mahala had thrown hot embers upon her ash-heap, which communicated a flame to the straw and shavings scattered about, and thus set the old place on fire. Now a surf of flame was breaking against the wall of the extension, where the old Madam's room lay. It would soon get round the angle and cut off that part of the ruinous building from human aid. The glow was spreading out into the still fields, where groups of cattle stood, wild-eyed and motionless. Some one was running in the direction of the mills, calling fire!

Every fibre in Dolly's body was awake on the instant. She knew where the danger lay, and what was to be done. Surely she trod the boards above the false brick-work, and groped along the huge chimney jam and down the shackly staircase, and through the winding and crooked passage, where the air was thick with smoke and the floor growing hot, and the walls bulging and cracking, and the window-panes shivering into sharp splinters as the red tongues of flame licked them and danced along the wall. She knew the path through it all to her grandmother's door. She got it open, in spite of a great opaque cloud that obstructed the way. The poor old woman was white and motionless, lying in a cramped bundle upon her bed. She was almost gone from suffocation. Dolly shook her, and called into her deaf ear with a cry of agony. She lifted and strove with desperation to get her placed in her chair. She ran to the water-pitcher near by, and dashed its contents into the unconscious face. All around the fire snapped and crackled, and raged and roared like an angry sea. Then Dolly remembered Mahala, and shrieked out her name, and a weird figure struggled through the smoke, and together they worked like phantoms in a nightmare. They placed the unconscious old creature in her chair, and lifted and bore it through the smoke and flame, with the burning boards blistering her feet, and cinders and hot ashes falling upon their heads. The old rotten porch, dry as tinder, had gone down at the first blast. It lay now in a pile of burning fragments across the threshold. The flames singed Madam Dillingham's white locks and beat upon her blind eyeballs, until the sense of imminent peril forced from her a piteous cry.

Dolly fought the fire with her tender lit-

tle hand. She struggled and contended, and strove to force a passage through that red sea of flame for those helpless old people. But there came the consciousness at last, as the waves of fire rushed upon them, that all three must perish before the open air was reached. In that great, solemn, last moment of consciousness, when hope seemed gone, some little happy spring opened in Dolly's heart that for days had been heavy with pain. She was glad to die. It was so much better than to live without her love.

There came a ringing shout of rescue. She knew it was George Boardman's voice, and then all sound and sense went from her. Dolly seemed suddenly to drop down an immeasurable gulf of darkness. When she awoke it was fair, sweet morning, with dew upon the grass, and the young light quivering over the trees. The old house had gone up proudly in its winding-sheet of smoke and flame, and there were only the smouldering walls and blackened tree trunks, and a low ring of fire to tell the story. The old Madam was not far off, propped in her chair. She was fast asleep, with the peaceful look of an aged infant upon her face. Dolly, as she raised her hand, touched something that lay hidden in her bosom. It was the packet of her aunt Janet's love-letters. That record of imperishable heart's love was all there was worth saving, perhaps, from the wreck of selfish passions which the destruction of the old house seemed to typify. As she glanced feebly up her eyes met the eyes of George Boardman.

"Dear, brave heart," he whispered, bending over her. His voice was husky and choked with tears. He took her head in his arms and pressed it against his breast, and made a little shelter for it, covering the pretty soft hair with kisses.

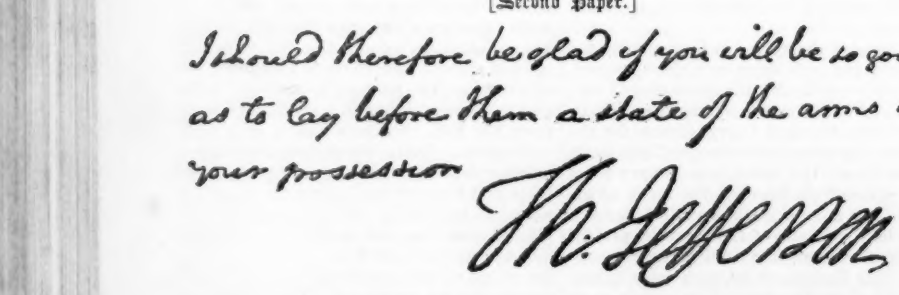
"Old Mahala has told me all," he said, when at last he could speak. "Can you forgive me for making you suffer? I thought you must know how entirely I love you. I thought you ought to trust me as I would trust you in life or in death. From the day I saw you first in the meadow I vowed you should be my wife, if wife I ever had. I was waiting until the cottage was finished to tell you that all I have, or ever shall have, is yours. The cottage is ready for you, my darling. Are all reckonings settled, all scores wiped out between us?"

The sunrise of a great happiness dawned in Dolly's eyes, and she smiled her answer up into his face.

SIGNERS OF THE DECLARATION OF INDEPENDENCE.

By BENSON J. LOSSING.

[Second Paper.]



THOMAS JEFFERSON.

THE "Author of the Declaration of American Independence, of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia," as Thomas Jefferson wrote for his own epitaph, was a little more than thirty-three years of age when he signed that Declaration, and exactly fifty years afterward, to a day, he died. His history is too well known to all intelligent Americans to need further notice here.

As Governor of Virginia from 1779 to 1781, Mr. Jefferson, like Benjamin Harrison two or three years later, was much interested, privately and officially, in the settlements forming in the valleys beyond the mountains, in what is now Kentucky. The Indians in that region were then hostile and active, and were making it a "dark and bloody ground." The isolated settlers called for protection. The Legislature of Virginia responded by authorizing the raising of a battalion of troops for service in t' at region, and another for the Ohio region under General George Rogers Clarke. In relation to these troops Governor Jefferson wrote from his home in Albemarle, on the 7th of August, 1779, to Colonel William Fleming, one of the commissioners, as follows:

"The inclosed order will explain to you the general plan adopted for regimenting, officering, and stationing the two Western battalions; and we are in hopes

you will so far proceed in concert with the other commissioners as that the chain of posts to be recommended may form a complete Western defense, leaving no chasm in the middle. We wish you, when we report the stations proposed, to advise us also to what particular station it will be best for the men of each county respectively to go. As it will not be long before the men ought to be raised, according to the directions of the law, it will be proper for the convention to give immediate attention to the procuring arms and camp utensils for them. I should therefore be glad if you will be so good as to lay before them a state of the arms in your possession."

FRANCIS LIGHTFOOT LEE.

With his "gay good humor and pleasing wit," Francis Lightfoot Lee, brother of Arthur and Richard Henry Lee, of Virginia, was a general favorite. When a little past thirty years of age he was a member of the Virginia House of Burgesses, and in 1775 he entered the Continental Congress, where he remained until 1779, active and useful. He signed the Declaration at the age of forty-two years.

There were other stirring events at about the time when the Declaration was adopted to which the serious attention of the Americans was called. Concerning these Mr. Lee wrote as follows to his brother Richard Henry on the 16th of July, 1776, giving him facts and criticisms freely:

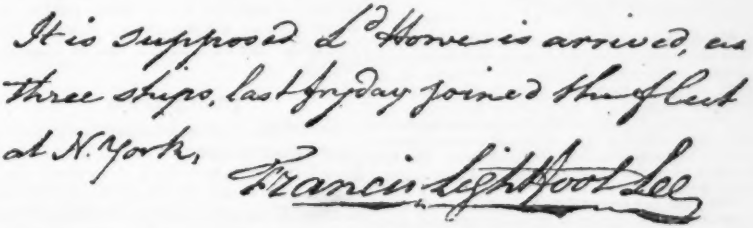
"I have written to you every post since you left this; if you have not received the letters, there must still be some villain in the post-office.

"It is supposed Lord Howe is arrived, as three ships last Friday joined the fleet at New York; one very large, with St. George's flag at the mast-head, which was saluted by the whole fleet. The rest of his myrmidons are not far behind, I suppose. Two men-of-war and three tenders have run by all our batteries, and got above Kingsbridge without any damage. It always appeared to me that our generals placed more confidence in their batteries than they deserved. It seems probable that Howe will land his army above Kingsbridge, and cut off all communication with New York by land, while the fleet does the same by sea, in which case our army must starve, or attack the enemy in their intrenchments. I fear such an event is not sufficiently attended to. The defenses of New York seem to engross all their thoughts."

Washington, with the bulk of the Continental army, was then in New York. General Howe and his army had recently landed on Staten Island. They had been brought in transports from Halifax. His brother, Admiral Sir Richard Howe, arrived with his fleet a few days later, and the *Eagle*, his flagship, was the one mentioned by Lee as the receiver of salutes. On the 12th of July the *Rose* and *Phenix* ships of war, with their decks guarded by sand-bags, passed the batteries, as mentioned, to a point above the mouth of the creek spanned by Kingsbridge, at the upper end of New York Island, and thence to Haverstraw Bay, thirty miles up the Hudson. It was the plan of the British (below alluded to) to seize New York, or pass it, and the country along the Hudson, and meeting Burgoyne, then coming up Lake Champlain from Canada, cut off New England from the rest of the Union. It was important to pay attention to the defenses of New York. Mr. Lee continues:

"Colonel W. Alleyn arrived yesterday from Crown Point [on Lake Champlain]; he left 600 men there [just driven out of Canada], half sick. By these last accounts from St. Johns, Burgoyne had 1000 there; no preparation of boats. It is said the Six Nations begin to be troublesome; indeed, from all appearances, we shall soon have the whole of the Indians to encounter.

"General Washington has as many men as he wants, and lest Howe should think fit to march into the Jerseys, we shall soon have 20,000 there to cope with him; but I think it is very improbable that he will give up the scheme of opening a communication with Canada by the North [Hudson] River."



Mr. Lee, expecting his brother to take his seat in Congress, continues:

"I have now got a very good house near the State-house, in which you may have choice of good rooms, well furnished, except with beds. As we have but one, it is necessary we should know as soon as possible when to expect you, that we may provide for you. We have this house certainly till the last of October, and a chance for the winter."

During one of the coldest winters ever experienced in Virginia, Mr. Lee and his wife caught a cold in Richmond, which terminated in pleurisy, and both died in that city, childless, within a few days of each other, in April, 1791.

RICHARD HENRY LEE.

The author of the resolution declaring the united colonies free and independent, signed his name to the pledge to support that resolve when he was forty-four years of age. He was an ardent and active patriot during the preliminary stages of the Revolution, and was a delegate to the First Continental Congress in 1774, wherein his tongue and pen, so free and eloquent, made him a lead-

Congress has adopted the European plan in offering six Hessian field officers for Gen. Lee.

Richard Henry Lee

ing spirit. He wrote the splendid second address of Congress to the people of Great Britain. It is said that his speech when he introduced his famous resolution was one of the most brilliant specimens of oratory ever heard in our national council. He was in Congress when that body fled from Philadelphia to Baltimore, late in 1776, and from his seat there, on the 5th of January, 1777, wrote the following cheering letter to General Adam Stephen, of Virginia (afterward dismissed from the service for intoxication), immediately after the battles at Trenton and Princeton:

"Nothing could have appeared more opportunely than the drubbing you have given the Hessians at Trenton. God grant the blow may be followed up until you expel these robbers from the Jerseys at least! If they do not get a severe castigation for their last manœuvring in Jersey, they will sophisticate all Europe with lies. The *Genius of America* seems now to be awakened from profound sleep. Let the moment be improved for making a vigorous and decisive impression.

"We have had several valuable arrivals lately with powder, woolens, and arms. More are daily expected. But you seem now to have got into a shorter and surer method of obtaining these by stripping the enemy. I heartily approve the plan. I am still of the opinion that the spring torch will light up a general war in Europe; but still we should be prepared to receive the enemy in every quarter. Both in public and in private as little should rest upon externals as possible..... Congress has adopted the European plan in offering six Hessian field-officers for General Lee. If it is not accepted, I hope a noble fend will take place between these foreigners and their British allies."

General Charles Lee had been captured by the British in New Jersey, three weeks before this letter was written, under suspicious circumstances. Facts which have since transpired respecting the double treason of Lee make it almost certain that he had invited capture.

Richard Henry Lee was chosen President of Congress in 1784, and in 1792 ill health compelled him to retire from public life, when he was United States Senator from Virginia. He died at his seat at Chantilly in 1794.

FRANCIS LEWIS.

One of the older members of Congress who signed the Declaration was Francis Lewis, of New York, who was then sixty-three years of age. He was a native of Llandaff, in the shire of Glamorgan, in South Wales, where he was born in 1713. He brought to New York nearly his whole fortune, in the shape of merchandise, when he had attained his majority, where he engaged extensively in navigation and foreign trade. In the French and Indian war he was a staff-officer, and

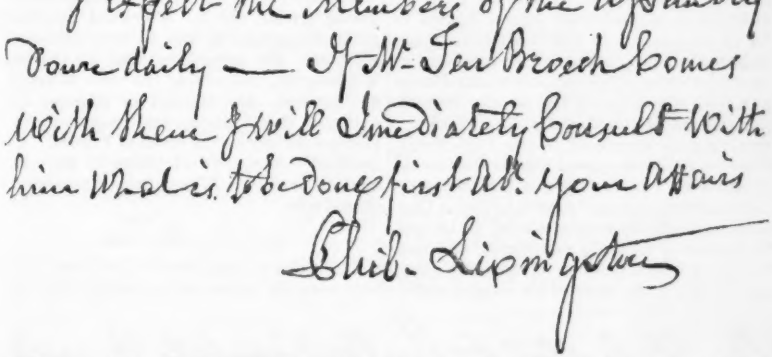
I have therefore directed Mr Ogden to continue the Shoemakers at work in Jersey and have also imployed others here.

Fra's Lewis

was sent to France as a prisoner after being captured at Oswego in 1757. He was a member of the "Stamp-act Congress" in 1765, and entered the Continental Congress ten years later, wherein he continued, as a representative of New York, until 1779. His commercial knowledge made him extremely serviceable to the commissary and quartermaster's departments. In connection with such business he wrote the following letter from New York on the 2d of May, 1776:

"I have been favored with your letter of the 20th ultimo, which I should have answered sooner, but waited for an opportunity of consulting Colonel Mifflin, Q.M.G., on the subject of shoes, who informs me that the full quantity, say 10,000 pair, ordered by Congress, will be wanted for the army. I have therefore directed Mr. Ogden to continue the shoe-makers at work in Jersey, and have also employed others here. Stockings are not to be procured in this city; they must be got at Philadelphia, and money must be sent to pay for shoes....As our election for delegates is to be on the 14th inst., I shall defer my return to Philadelphia till that is over."

Mr. Lewis suffered much from the cruelty of the Tories. They wasted his property on Long Island, and caused the death of his wife by confining her for several months in a close prison, without a bed or a change of clothing. Reduced from affluence to almost poverty, the patriot lingered until 1803, when he died at the age of ninety years.


I Expect the Members of the Assembly
Down daily — If Mr. Ten Broeck comes
with them I will Immediately Consult with
him What is to be done first Ab. your Affairs
Chris. Ludwig

PHILIP LIVINGSTON.

Another of the older members of Congress in 1776 was Philip Livingston, of New York, who was sixty years of age when he signed the Declaration. He was a native of Albany, and grandson of the original proprietor of the manor of Livingston, on the Hudson. As a merchant in the city of New York, he became distinguished for probity and enterprise; and he was equally distinguished as a patriot and member of the Provincial Assembly, of which he was chosen Speaker in 1768. He was a member of the First and Second Continental Congresses, and subsequently of the New York Provincial Congress, serving upon some of the most important committees with fidelity and zeal. He was also very active in various public duties in New York at the same time. Although his health was failing, in the spring of 1778 he accepted of a seat in Congress. On departing for Philadelphia he told his family it was doubtful if he returned alive. He died in June, a little more than a month after he took his seat in Independence Hall.

The only letter from this patriot's hand found in the collection before me was written to his daughter Catharine, mother of the Hon. Stephen Van Rensselaer, the last of the patroons of the State of New York. It is dated at New York on the 5th of January, 1772. The father wishes his daughter a "happy year, and many returns of the New-year," and that she might live to see her children grow up and be a comfort to her and she to them. After speaking of her eldest son, Stephen (the last patroon, then eight years of age), having been with his grandfather for a fortnight, he wrote: "I expect the members of the Assembly down daily," and alluded to Mr. (afterward General) Ten Broeck, being charged with some business for her, if he should come down.

THOMAS LYNCH, JUN.

An awful mystery hangs over the fate of Thomas Lynch, Jun., next to the youngest man who signed the Declaration, he being at that time only twenty-seven years of age. He was born on the banks of the North Santee River, in South Carolina, and was heir to a large fortune. He was educated at Eton School and the University of Cambridge, in England, returned to his home in 1772, and married. He was prepared for the profession of the law, but relinquished it and became a planter. He was made a captain in the First South Carolina regiment, raised in 1775, while his father, Thomas Lynch, was in Congress. With delicate health he entered upon military duties, but

I fervently pray God to watch over your Excellcy's life, & to make you as happy & successfull as you are good & brave.

Thomas Lynch

was soon called to take the seat of his dying father in Congress in 1776. His own declining health compelled him to resign that seat not long after he signed the Declaration, and in 1779 he embarked for the island of St. Eustatia, in hopes of restoration. The vessel was never heard of afterward.

His letter in the collection before me is dated Charleston, July 5, 1777, and is addressed to General Washington. It is the only letter of the young patriot known to be in existence. It was written to introduce to the acquaintance of the commander-in-chief Colonel Charles Cotesworth Pinckney, with whom Lynch had been on recruiting service in North Carolina. Pinckney was then in command of the First South Carolina regiment, raised for the Continental service. Lynch spoke of his family as being as "respectable" as any in South Carolina, and of the young colonel as having "a fortune abundantly competent," and that "nothing but a passion for military glory and a zeal for the cause of his country could have led him into this matter.....As to principles," Lynch continued, "I am bold to say that no living man has a higher spirit, a nicer sense of honor, or a more incorruptible heart than he has." He strongly commends Pinckney to his excellency's favor, and adds, "I fervently pray God to watch over your excellency's life, and to make you as happy and successful as you are good and brave."

Pinckney fulfilled the expectations of his young friend, for he afterward acquired great distinction in the military and civil services. He became an aid to General Washington, and rose to the rank of brigadier-general. He assisted in forming the national Constitution, and was minister plenipotentiary at the court of France. He declined two prominent places in the cabinet of President Washington which were offered him.

ARTHUR MIDDLETON.

This accomplished South Carolinian was born near the banks of the Ashley River in

Our Delegates & the Continental Congress seem to approve your proceedings, in as much as they have assimilated theirs to them on a good measure—

Arthur Middleton

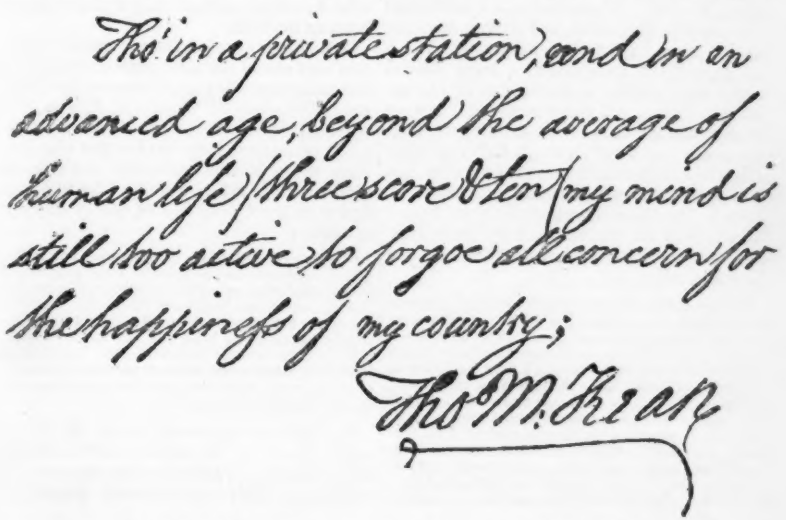
1743, with a large fortune in prospect. He was educated in England; was graduated at Cambridge University at the age of twenty-one years; married a daughter of Walter Izzard soon after his return home; made a tour of Europe with his bride during two years; espoused the cause of the patriots on his return, in 1773, and became an efficient member of the South Carolina Council of Safety. In a letter written from that council on the 5th of August, 1775, after alluding to the return of a person from Philadelphia with news respecting the grand council there, in which South Carolina was ably represented, and over which his father (Henry) had presided, he wrote: "Our delegates and the Continental Congress seem to approve of our proceedings, inasmuch as they have assimilated theirs to them in a good measure." Alluding to the fact that Congress had divided the continent into three Indian departments, he said the Southern one was to receive from the Continental treasury $10,000 for defraying the expenses of treaties with and presents to the Indians.

Alluding to the proposed augmentation of the military force, he said the estimated sum that South Carolina must raise toward defraying the expenses of that campaign would not be less than £75,000. "Some of the council stare!" he wrote. He alludes to a resolution of Congress (July 15, 1775) allowing the importation of gunpowder, saltpetre, and sulphur, under certain conditions, and the exportation of the productions of the country to the value of such imports, "the non-exportation agreement notwithstanding;" and adds, "We shall be driven into a sea war at last," and then copies the resolution of Congress (July 18) recommending each colony, "at their own expense," through provincial conventions or committees of safety, to make provision, "by armed vessels or otherwise, for the protection of their harbors, and navigation on their sea-coasts."

In July, 1776, Mr. Middleton was a delegate in Congress, and signed the Declaration; and he suffered much in estate by the ravages of the British invaders in 1779 and 1780, when he took up arms. He was made a prisoner at Charleston, and was confined at St. Augustine, and in the *Jersey* prison-ship at New York, until 1781. He again served in Congress, and died in 1788.

THOMAS M'KEAN.

The only member of the Continental Congress who served in that body without intermission during the whole period of the war was Thomas M'Kean, who represented


Tho' in a private station, and in an
advanced age, beyond the average of
human life (three score & ten) my mind is
still too active to forgo all concern for
the happiness of my country;
Tho M. Kean

what is now the State of Delaware. He was forty-two years of age when he signed the Declaration. Mr. M'Kean was a lawyer, was a member of the "Stamp-act Congress" in 1765, and was a judge when he was chosen a delegate to Congress in 1774. He assisted in framing the first national government of the United States, in 1778, known as the "Confederation," and in 1781 was made President of Congress. He was also the first President of the State of Delaware.

Like others of the Signers, Mr. M'Kean was "hunted like a fox," as he expressed it, being compelled to move his family five times in a few months. From 1799 till 1808 he was Governor of Pennsylvania. Soon after leaving that station in February, 1810, he wrote a letter to President Madison, from Philadelphia (now before me), introducing Henry

Pratt and his own daughter, Sophia Dorothea (the "only child" in his family), "to pay their respects to Mrs. Madison." After complimenting the President, he writes:

"Every occurrence hitherto in the government of the Union meets my approbation, though the observations of some members of Congress on different occasions have given me concern; and perhaps our national affairs might have been managed better; but my greatest surprise is that they have been managed so well. Tho' in a private station, and in an advanced age, beyond the average of human life (threescore-and-ten), my mind is still too active to forego all concern for the happiness of my country."

Governor M'Kean died in 1817, aged eighty-three years.

LEWIS MORRIS.

One of the wealthier members of Congress who signed the Declaration, and whose family had been distinguished for a long time, was Lewis Morris, born at Morrisania, New York, in 1726. He entered the Continental Congress in May, 1775, and served on some of the most important committees. When he signed the Declaration a large British army was within a few miles of his extensive estate, and three armed ships were within cannon-shot of his dwelling. That act made him a special mark for vengeance. His woodlands of a thousand acres were laid waste, and his whole estate was ravaged. Just before these devastations were begun he wrote to the chairman of the New York Committee of Safety (August 18, 1776) from New Rochelle:

"I have the pleasure to inform [you] that, agreeable to direction of Congress, the militia of the county have turned out with great cheerfulness. As there is no enemy in the [Long Island] Sound, and considering the present season to the farmer, I take the liberty to recommend the dismissing the militia for the present, ordering the captains to parade and discipline their men once a week, and that they hold themselves in readiness to march on the shortest notice. I am particularly inclined to this measure as the five days' provisions will be out to-morrow, and no commissary of provisions provided. The arms have been examined, the greater part in good repair, and such as wanted are put in the hands of armorers, so that I am in hopes the major part of the militia will be tolerably well armed."

Three days after this was written the battle on Long Island was fought, and the estate of Morris was speedily ravaged. He seems to have been in military command at that time, for he speaks of a court-martial, and says, "I am determined, while honored with the command, to use my best endeavors to preserve strict discipline." He left Congress in 1777; was elected a member of his State Senate, and was commissioned a major-general in his State militia. He died in 1798.

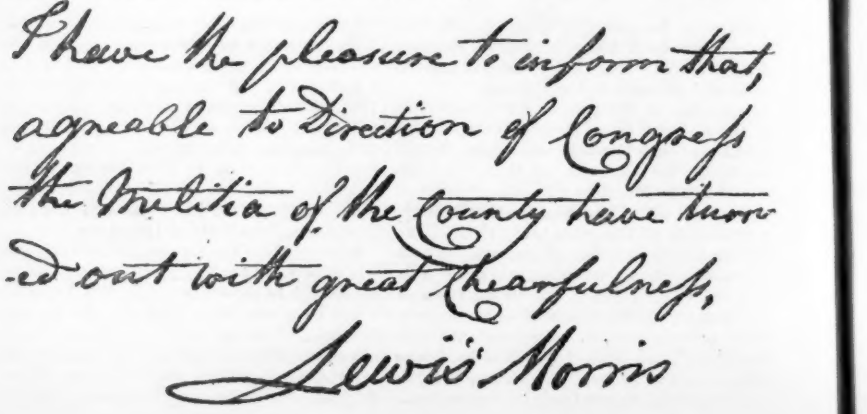
ROBERT MORRIS.

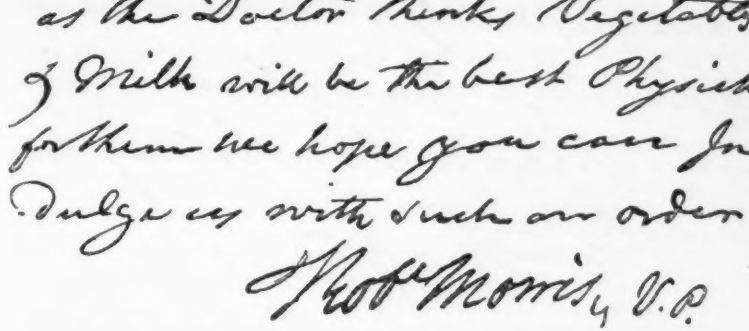
The career of the great financier of the Revolution is familiar to all intelligent Americans as a merchant whose personal credit was better than that of the Congress, and who, in after-years, actually suffered imprisonment for debt.

Mr. Morris entered Congress late in 1775, and was one of the most active members of the most important committees of that body, especially that of Ways and Means. His personal credit more than once saved the great cause from failure. He was vice-president of the Marine Committee when, on the 15th of May, 1776, he wrote the following letter to the Committee of Safety of Pennsylvania:

"Captain Wickes, of the ship *Reprisal*, now at Fort Island, represents he has seven or eight sick men on board, and desires us to procure him an order for their admittance into the hospital at the pest-house; and as the doctor thinks vegetables and milk will be the best physic for them, we hope you can indulge us with such an order without inconvenience. The bearer is captain of marines, and will wait your answer, and receive the order, if granted. Every expense that arises shall be paid by this committee."

By his own personal credit Mr. Morris raised funds to the amount of $1,400,000, which enabled Washington to prosecute the campaign which resulted in the capture of


I have the pleasure to inform that,
agreable to Direction of Congress
the Militia of the County have turn-
-ed out with great Chearfulness,
Lewis Morris



Cornwallis and the independence of the United States. To the close of the war, and afterward, he sustained the public credit. Vast speculations in his old age impoverished him, and he was permitted to lie in a Philadelphia jail for debt. He died poor, at the age of seventy-three years.

JOHN MORTON.

At the age of forty-one years John Morton, a native of Chester, Pennsylvania, was a member of the "Stamp-act Congress," and eleven years later, as a member of the Continental Congress, he signed the Declaration. Intelligent, well-educated, and of irreproachable character, he was an honored servant of the public in the General Assembly of Pennsylvania, of which he was Speaker for three years. He was also high sheriff, and a justice of the Supreme Court of Pennsylvania. The chief specimen of his writing in the collection before me is the following attestation:

"Sworn to before me, the subscriber, one of the justices of the Supreme Court of the Province of Pennsylvania, August the 1st, 1776."

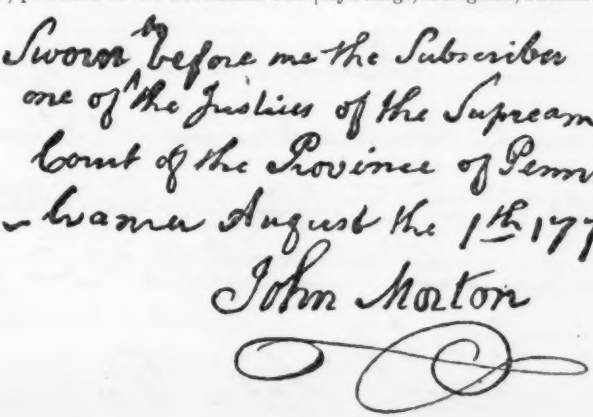
Below this is a certificate signed by Dr. Franklin, president of the Provincial Convention, that Morton was such justice. The attestation of the latter is affixed to a deposition of Captain Jeremiah Duggen, that when he was about to depart from Quebec General Arnold urged him to denounce Major John Brown to Congress as a "damned rascal and a villain," a "plunderer of prisoners," etc.; that when Duggen suggested that the proper way would be for Arnold to write to Congress, the latter declined, saying, "You impeach him and I will enforce it;" and that he refused to carry any such message, unless it should be written by Arnold. Duggen further stated that there was (as he knew personally) "no officer serving in that country [Canada] with greater reputation than Brown."

Major Brown was a gallant and faithful officer, and was the victim of Arnold's ill-will, like other good men, such as Hazen, Bedel, Antil, etc.

Mr. Morton entered Congress in 1774, and continued to occupy a seat therein until his death, in April, 1777.

THOMAS NELSON, JUN.

While he was on his way home from Trinity College, in England, Thomas Nelson, Jun.,



I immediately ordered her back to the Ship Yard, because in my opinion it is risking too much, Thos Nelson jr. B. G.

then not quite twenty-one years of age, was elected a member of the Virginia House of Burgesses. His father was a leading man in the colony, and his family were influential. He entered Congress in 1775, and the following year he advocated and signed the Declaration of Independence. In 1777 he was appointed commander-in-chief of the Virginia militia. To pay the expenses of a force to expel a marauding party under General Mathews in 1779, a loan of $2,000,000 was called for, a greater portion of which Nelson obtained on his own personal security.

Early in 1781 the traitor Arnold was at the head of a British force depredating along the shores of the James River. General Nelson did all in his power to oppose him, and on the 9th of February he wrote the letter in this collection, concerning the use of a ship of the Virginia navy in an expedition against the enemy. She had been delivered for such use. Nelson wrote:

"I immediately ordered her back to the ship-yard, because, in my opinion, it is risking too much, and because she is particularly appropriated by act of Assembly, so that my powers do not extend to allotting her for any such enterprise. My idea was that he should have taken some old hulk that would not have been any loss to the State....If, as he is gone so far, you choose he should prosecute his scheme, the *Dragon* shall be delivered to him again."

General Nelson rendered efficient service in the siege of Yorktown, and directed a bombardment of his own fine mansion there, for the purpose of driving Cornwallis out of it. With shattered health and fortune, he passed the remainder of his life in retirement, and died so poor that the remnant of his possessions were sold to pay his debts.

WILLIAM PACA.

The letter of William Paca, the distinguished Marylander, in this collection is purely a business one, in which he wrote to Aquilla Brown, on the 25th of August, 1776 (a little more than three weeks after he had signed the Declaration):

"The weather has been so very bad that I could only get out one floor of wheat to send this trip, amounting to about two hundred and forty bushels, which be pleased to dispose of to the best advantage."

The weather has been so very bad that I could only get out one floor of Wheat to send this Trip amounting to about two hundred & forty Bushels Wm Paca

Wherefore the said Attorney General in behalf of the Government and People aforesaid prays the Advice of the Court here in the Premisses and due Process of Law in this behalf to be made

At that time wheat was threshed in the Southern States by the treading of horses in the open field, after the manner of the ancients. Washington, writing to Henry Lee from Philadelphia, in October, 1793, concerning the difficulties in teaching overseers to use new methods, said:

"I have one of the most convenient barns in this or perhaps any other country, where thirty hands may, with great ease, be employed in threshing. Half of the wheat of the farm was actually stowed in this barn, in the straw, by my order, for threshing; notwithstanding, when I came home about the middle of September, I found a treading-yard not thirty feet from the barn door, the wheat again brought out of the barn, and horses treading it out in an open exposure, liable to the vicissitudes of weather."

Mr. Paca was an ardent opposer of British taxation, in the Maryland Legislature and elsewhere, and an active member of the First Congress. Soon after signing the Declaration he was appointed State Senator. After that he was Chief Justice, Governor of Maryland, and United States District Judge, holding the latter office at the time of his death, in 1799.

ROBERT TREAT PAINE.

The writing of Robert Treat Paine in the collection is in the form of a complaint, as Attorney-General of Massachusetts, in January, 1780, against Theophilus Lillie, an absconded Tory, charging him with having "levied war and conspired to levy war against the government and people of that province," and without their consent had withdrawn from it, at the close of March, 1776, and had not returned; therefore he proposed to confiscate Lillie's property in Boston. To the Court of Common Pleas, to whom his complaint was addressed, he said:

"Wherefore the said Attorney-General, in behalf of the government and people aforesaid, prays the advice of the court here in the premises, and due process of law in this behalf to be made."

Lillie, mentioned in this paper, was the Boston merchant who persisted in selling tea contrary to the public will, and had made himself conspicuously unpopular a few days before the "massacre," in 1770.

Mr. Paine was a native of Boston, studied theology, acted as chaplain to troops in the French and Indian war, but afterward studied law and made it his profession. He conducted with ability the prosecution against the soldiers engaged in the "Boston massacre," in 1770. His legal attainments became very great. Entering Congress in 1774, he played a conspicuous part in that body until 1778, when he was Attorney-General of Massachusetts. He left that office for the bench of the Supreme Court of his State, which he held until 1804, when he was seventy-four years of age. He died at the age of eighty-four.

JOHN PENN.

In the early autumn of 1775, John Penn succeeded Richard Caswell as representative of North Carolina in the Continental Congress. He had moved from his native

I have no news worth communicating to you, the enemy will not leave New York this winter.

Virginia to that State at the age of thirty-three, and was distinguished as an eloquent lawyer and ardent patriot. He signed the Declaration with alacrity, and was in Congress as late as 1780. When Cornwallis that year defeated Gates, and seemed to hold the Carolinas at his mercy, the people turned to Penn, and invested him with almost dictatorial powers, which he used with great discretion. At the close of the war he retired to private life, and died in 1788, in the forty-seventh year of his age.

In a letter to Jethro Sumner, a native of Virginia, who had lately become a citizen of North Carolina, Mr. Penn wrote on the 16th of January, 1777, acquainting him with the fact that Congress had appointed him a brigadier-general, and added:

"I have no news worth communicating to you; the enemy will not leave New York this winter. I suspect we shall have another campaign."

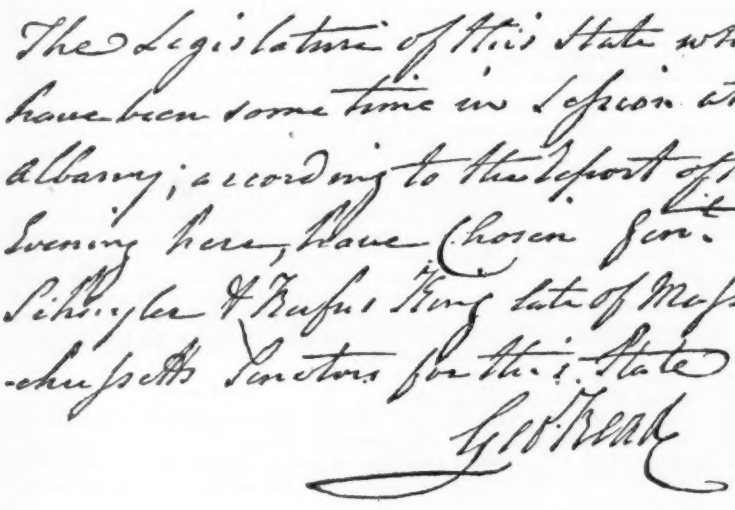
The British had taken possession of New York city about four months before. General Sumner was a very useful officer under General Greene in the Carolinas.

Vice-President of that commonwealth. He was raised to the bench, and was chosen one of the first United States Senators from Delaware. While in his seat as such, at New York, in the summer of 1789, he wrote to Colonel T. Rodney respecting a claim of the Pennsylvania battalion of the Flying Camp, of which General Mercer was the first commander. It was for money appropriated by Congress for their use, but which had never been paid.

Mr. Read, who wrote freely to Colonel Rodney concerning the proceedings of Congress, said that on the day he wrote (July 18), by the casting vote of the Vice-President, the President was invested with the sole power of removal from office. He concluded by writing:

"The Legislature of this State [New York], who have been some time in session at Albany, according to the report of the evening here, have chosen General Schuyler and Rufus King, late of Massachusetts, Senators for this State."

Mr. Read was Chief Justice of Delaware from 1793 until his death, in 1798. He was


The Legislature of this State who
have been some time in Session at
Albany; according to the Report of the
Evening here, have Chosen Gen.
Schuyler & Rufus King late of Massa-
chusetts Senators for this State -
Geo. Read

GEORGE READ.

Of the six signers of the Declaration who were also framers and signers of the national Constitution, George Read was one. The six were Franklin, Clymer, Robert Morris, Read, Sherman, and Wilson. A native of Maryland but a citizen of Delaware, Mr. Read, who was a skillful lawyer, took an early and active part in the politics of the lower section of Pennsylvania, known as the Three Lower Counties, and was its representative in the First Congress. He wrote the constitution of Delaware on its organization as a State, in 1776, and in 1777 was elected

forty-three years of age when he signed the Declaration.

CÆSAR RODNEY.

The father of Cæsar Rodney came to America with William Penn, and this son was born in Delaware at about the year 1730. He inherited his father's large landed estate, and first appears in public life as high sheriff, at the age of twenty-eight years. He was a member of the "Stamp-act Congress," and was for several years Speaker of the Assembly of Delaware. In 1774 he was a delegate in the Continental Congress, and the next year was commissioned a brigadier-

I am persuaded you will do every thing in your power without the least delay, to answer his expectations.

Caesar Rodney

general. He was the chief instrument in preparing the minds of the people of his State for independence, and labored hard in favor of the Declaration, which he signed. He served under Washington in New Jersey the next year, and in the autumn was elected to a seat in Congress again; but his appointment as Governor of Delaware caused him to decline it. He died in 1783. In the spring of 1780 there was distress and confusion and much disorder in the army, growing out of separate State action. Congress appointed a committee of three persons, composed of General Schuyler, John Matthews, and Nathaniel Peabody, clothed with extraordinary powers, to proceed to headquarters at Morristown, as Washington had requested, to confer with the commander-in-chief, and to join with him in effecting necessary changes and reforms in all the departments of the army. As the summer opened, distress and discontents in the army foreboded great mischief, and Washington appealed to the committee and to the State authorities for immediate action to avert the threatened evil. In this connection Governor Rodney wrote as follows to the Assembly of Maryland on the 17th of June, and at the same time put forth extraordinary exertions at home:

"Yesterday I received a letter from the Committee of Co-operation at Morristown, dated the 12th inst., together with copies of two letters from his Excellency General Washington to the committee, all of which I have directed the secretary to lay before your honors immediately; and as the general is very pressing, I am persuaded you will do every thing in your power, without the least delay, to answer his expectations."

GEORGE ROSS.

In the collection before me is only an order for the payment of money in the handwriting of George Ross. There is a letter of his in the possession of F. J. Dreer, of Philadelphia, dated in that city on the 23d of May, 1777, concerning a change in the government of Pennsylvania from a proprietary to a popular one. It was sent with copies of a circular letter or memorial to be directed to the several districts of the State.

"For God's sake and y^{r} country's," Ross wrote, "use all diligence, and get the memorials signed and sent to us by express. No time is to be lost."

George Ross was a native of Delaware, but in early life settled at Lancaster, in Pennsylvania, as a lawyer. He represented that district in the Pennsylvania Legislature; was a delegate in the Continental Congress in 1774; and in the Congress of 1776, at the age of forty-six years, he signed the Declaration. He was active both in the State and national councils until early in 1777, when ill health compelled him to leave Congress. He was a member of the convention which assembled in Philadelphia to discuss the dissolution of the proprietary government, and he prepared a declaration of rights. The

Please to Pay to Mr. Judah Foulk or Order Thirteen Pounds Ten Shillings and Oblige

Geo: Ross

I have discovered the cause of the opposition to your principles in the convention.

B Rush

Supreme Executive Council, under the new State constitution, assembled on the 4th of March, 1777, and appointed Thomas Wharton President or Governor of the commonwealth. Mr. Ross was raised to the bench in the spring of 1779, and died about three months afterward.

BENJAMIN RUSH.

At the age of thirty-one years Dr. Rush signed the Declaration. He was then an eminent physician in Philadelphia, where he had commenced the practice of medicine in 1769, after having studied the healing art in Philadelphia, Edinburgh, London, and Paris. An ardent patriot and energetic actor in the stirring scenes of the period, he was elected to Congress in time to allow him to sign the Declaration, and the same year he married a daughter of Richard Stockton, another of the Signers. He became Surgeon-General of the Middle Department in 1777, but resigned the next year. For many years he was a leading physician of the country, and enriched the literature of his profession by the labors of his pen. He was the recipient of royal recognitions of his excellence, and his numerous writings upon other topics than those of his profession have won for him a high place in American literature. Dr. Rush died in 1813; his widow lived until 1848.

James Wilson, one of the Signers, was a member of the convention which sat in Philadelphia in 1787 and framed the national Constitution. The following note addressed to him by Dr. Rush was probably written at that time. It is without date, excepting "Sunday, 2 o'clock:"

"I have discovered the *cause* of the opposition to your principles in the convention. It has been said that you have a plan of a constitution ready *cut and dry*, and that you intend to offer it without first showing it to any body. The charge against you is 'that you keep all your papers to yourself.' Do convince Mr. Lewis that he is mistaken! If you have any thing composed fit for the eyes of a second person, do put it into his hands. This act will put all things to rights. When I see you I will inform you how I obtained the above intelligence. It is *direct*, and may be *fully relied on*."

EDWARD RUTLEDGE.

The youngest signer of the Declaration was Edward Rutledge, of South Carolina, he being the junior of Lynch, of the same State, by a little more than three months.

The Congress having vested us with all their Powers we beg Leave to repeat that we are and shall be ready at all Times to meet a Committee from your Board

E. Rutledge.

Vivacious, docile, and affectionate in his youth, he had won the love of all around him. Having perfected himself in law studies in England, he had entered upon its practice, and was rising into distinction when he was called to a seat in the First Congress. He was then less than twenty-five years of age. He was there still in 1776, when the Declaration was adopted, engaging with eloquence in the debate. He had already (in June, 1776) been appointed a member of the first Board of War, and from the "War-office, 2 o'clock P.M., Thursday, Nov. 21st, 1776," he wrote as follows to the Council of Safety of Pennsylvania:

"I did myself the honor of writing you about two hours since, informing your honorable body that the members of the board were very ready to confer and co-operate with you in any measure you should think necessary for the defense of this State. The Congress having vested us with all their powers, we beg leave to repeat that we are and shall be ready at all times to meet a committee from your board to consult upon such steps as may require our joint labors. Should you be inclined to hold a conference, you will be pleased to signify the same to me."

A little later Mr. Rutledge was one of a committee to confer with the British Commissioners, on Staten Island, concerning reconciliation. When actual war reached his State he took the field as commander of a company of artillery, and in 1780 was made a prisoner at Charleston, and suffered confinement for a year at St. Augustine, when he was sent to Philadelphia, with many other leading men of his State, and exchanged. He was in the Senate of the United States in 1794, in 1798 was elected Governor of South Carolina, and died at the beginning of the year 1800.

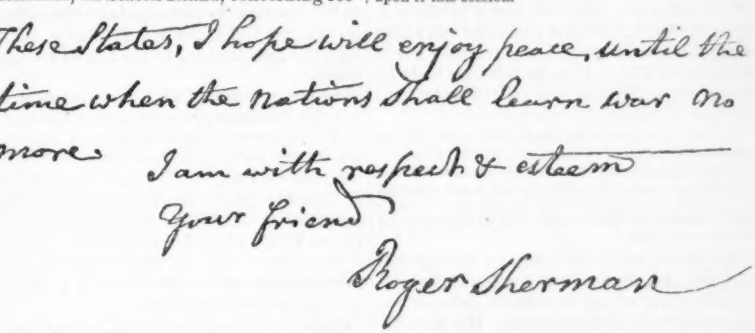
ROGER SHERMAN.

At the business of shoe-making Roger Sherman toiled with filial devotion to support his mother and her smaller children after his father's death, all the while studying hard to acquire knowledge, especially of the science of mathematics. He became surveyor of his county in Connecticut, and for several years furnished the astronomical calculations for an almanac published in New York. After a brief study of law he was admitted to the bar, and was soon in the General Assembly of his State, and a judge on the bench, which office he held nineteen consecutive years.

Judge Sherman was a member of the First Congress, was one of the committee to draft the Declaration of Independence, at the age of fifty-five years, and during the war served faithfully on important committees. He was elected to the Senate of the United States in 1791, wherein he strongly supported the financial schemes of Alexander Hamilton, especially the just one of the assumption of the State debts by the general government.

In a letter from New York in June, 1790, written to William Ellery, after congratulating the latter on his appointment to the office of Collector, and alluding to an interview with Rhode Island Senators, Mr. Sherman said:

"I hope there will be an agreement to provide for the State debts before Congress closes the present session. The matter of weights and measures and coinage was only taken up in Congress and referred to the Secretary of State [Mr. Jefferson]. He has not yet reported upon it, but he lately showed me a report which he had prepared, but I believe no law will be passed upon it this session."


These States, I hope will enjoy peace, until the time when the nations shall learn war no more
I am with respect & esteem
Your friend
Roger Sherman

In April, 1792, Congress passed a law for the establishment of a mint, but it was not put into full operation until the beginning of 1795.

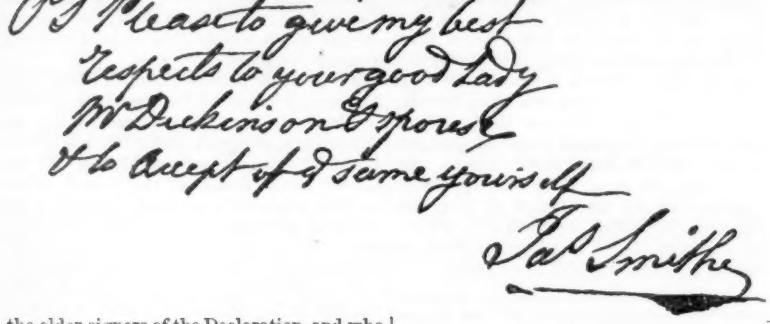
After alluding to the French revolution, Mr. Sherman concludes by saying:

"I think it will be an important event to European nations in general, as well as to us. These States, I hope, will enjoy peace until the time when the nations shall learn war no more."

This man of sterling common-sense, whom Jefferson declared to have "never said a foolish thing in his life," and of whom John Adams said, "He was one of the most sensible men in the world—the clearest head and the steadiest heart"—died in New Haven in the summer of 1793.

JAMES SMITH.

A droll, humorous, witty, eccentric, convivial Irishman, of uncouth appearance and drawling words, was James Smith, one of



the older signers of the Declaration, and who was the only lawyer in York, Pennsylvania, for many years before the Revolution. He was born in Ireland, at what time nobody knew, but probably about the year 1718. He was popular in his neighborhood. He raised the first volunteer company for the war, in Pennsylvania, in 1774, and in the convention of 1775 he resisted the "testimony" of the Quakers against fighting the British oppressors. He was not in Congress when the Declaration was adopted, but was there in time to sign it in August (when he was about sixty-four years of age), and retained a seat there until 1778. After he left that body he wrote the following note (without date) to Charles Thomson, their secretary:

"I sent my account for services in Congress, inclosed to Mr. Wilson, by the bearer, Francis Jones. I am informed you are to tax it, get it allowed by the President (or something, I know not what), and that then (and not otherwise) I will be paid by y^e^ Provincial Treasurer, Dr. Rittenhouse. Be so kind as to do the needful for me."

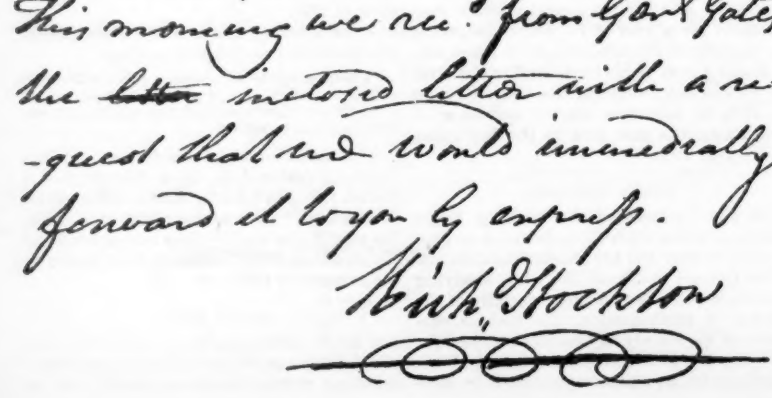
Mr. Smith wrote an essay on the powers of Great Britain over the colonies, which gave the first strong impulse in favor of independence in Pennsylvania. He died in 1806, at the age of about ninety years.

RICHARD STOCKTON.

In the suburbs of Princeton, New Jersey, is a substantial house on the estate of "Morven," in which Richard Stockton lived and died. He was unrivaled at the bar when the fires of the Revolution were kindled, and in their blaze he suffered terribly in body and estate. After serving his native State, and ascending the bench of the Supreme Court, he was chosen a delegate in Congress in 1776, in time to participate in the debates on the resolution for independence, and to sign the Declaration, at the age of forty-six years.

In the autumn of that year disasters befell the Northern Army on Lake Champlain, and Mr. Stockton was appointed one of a committee to inspect that army, and report its state to Congress. When they arrived at Ticonderoga, the head-quarters of General Gates, General Carleton was in possession of Crown Point, which he abandoned on the 3d of November. On the 10th Stockton wrote from Albany to the President of Congress, in behalf of the committee:

"Of this great event you will have received authentic accounts before this can reach you. We returned



I have undertaken to file a bill in Chancery for Mrs Merritt and shall give my attention to the business —

J Stone

here the evening before the last, and this morning we received from General Gates the inclosed letter, with a request that we would immediately forward it to you by express. We are acquainted with all the contents of it, and had a conference with the commissioners from the Massachusetts Bay, in company with General Gates, before we left Ticonderoga. We did not fail to represent to them, in the strongest terms, our apprehension of the fatal consequences of the measure adopted by the General Court, and advised them by all means to suspend the declaration of these powers until Congress should be advised of this extraordinary step. We left them apparently undetermined, and as to what has followed, General Gates's letter will fully inform you."

The measure alluded to was the offer by the Assembly of Massachusetts of larger bounties for soldiers than Congress had offered. The subject had already excited a good deal of feeling in Congress, and on the day after the above letter was written that body passed a resolution deprecating that action, and expressing the opinion that if soldiers should be enlisted on terms "more advantageous than what are offered to other soldiers serving in the same army, it would much retard, if not totally impede, the enlistment of the latter, and produce discontent and murmurs, unless Congress should equally increase the pay of these," which, in their opinion, "would universally be reprobated as an immoderate expense, and complained of as a grievous burden by those who must bear it."

Immediately after his return to his home, Stockton was seized by some refugee loyalists, carried to New York, and treated with a severity amounting to absolute brutality, which laid the foundation of the disease which ended his life, in 1781. His fine estate was desolated by the enemy at the close of 1776.

THOMAS STONE.

Not a brilliant man, but a most correct, honorable, honest, and patriotic man, was Thomas Stone, of Maryland, a lawyer by profession, who entered Congress in May, 1775. He was descended from Governor Stone, who ruled Maryland in the time of Cromwell's Protectorate. In 1776 he was placed on the committee for devising a plan for a national government, and served diligently and intelligently. When he signed the Declaration he was thirty-three years of age. He was in Congress much of the time

I Rec.d y.rs of this Date, and have sent you by the Bearer 41. of Lead which is all that remains of the Pigg.

G.o Taylor

during the war; and then and afterward he served his State conspicuously in its Legislature.

The only letter of Mr. Stone in the collection before me is a purely business one, on private affairs, written at Annapolis, in November, 1786, in which occurs the sentence here engraved:

"I have undertaken to file a bill in Chancery for Mrs. Merrit, and shall give every attention to the business."

He died the next year.

GEORGE TAYLOR.

Arriving from Ireland penniless, at the age of twenty years, George Taylor commenced life in America as a common laborer in an iron-foundry at Durham, Pennsylvania, the proprietor of which had paid his passage over. He had a good education, and was soon promoted to the position of clerk. Finally he married the widow of his first employer, acquired a fortune, established ironworks on the Lehigh River, and became, in time, a prominent member of the Provincial Assembly. In 1770 he was county judge and colonel of the militia, and on the 20th of July, 1776, he was elected to a seat in Congress, where, eleven days afterward, he signed the Declaration, when he was sixty years of age. He retired from Congress in 1777, and removed to Delaware, but died at Easton in 1781. From that place he wrote a letter to a gentleman at Durham, in September, 1780, on business, in which occurs the sentence engraved:

"I received yours of this date, and have sent you, by the bearer, 41 lbs. of lead, which is all that remains of the pig."

MATTHEW THORNTON.

Equally brief is the autograph note of Matthew Thornton, of New Hampshire. It is simply an order to Colonel Nicholas Gilman, as follows, dated "In Committee of Safety, Exeter, January 20, 1775:"

"You are desired to deliver to Captain Benjamin Titcomb thirty pounds of gunpowder, for the use of his company, and take his receipt for the same."

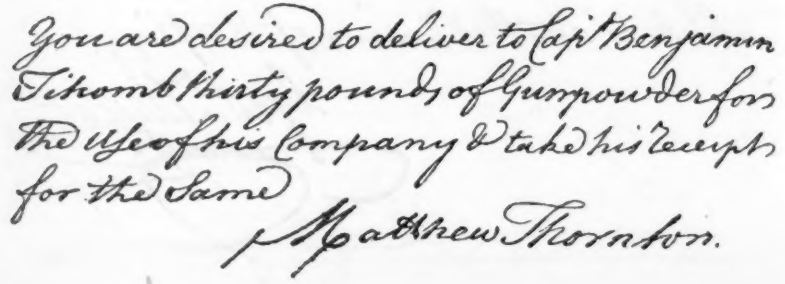
Thornton was also a native of Ireland, where he was born in 1714, and came to America at an early age. He received an academic education at Worcester, Massachusetts; studied medicine, and began its practice at Londonderry, in New Hampshire. He was a surgeon in the provincial army in 1745, and twenty years later presided over the convention which assumed the government of the colony. That was his position when he wrote the above order.

Dr. Thornton was only a short time in Congress, late in 1776, but was allowed to place his signature to the Declaration before the broadsides, mentioned at the beginning of these sketches, were printed. He was a judge of the Supreme Court of New Hampshire at near the close of the war, and served his State in its Legislature and Council. Dr. Thornton died in 1803, at the age of eighty-nine years. Over his grave lies a white marble slab, on which is the best of epitaphs—"AN HONEST MAN."

GEORGE WALTON.

With a hard master, George Walton, a Virginian, learned the trade of a carpenter. His education from books was exceedingly limited, but with a clear brain, good bodily health, and an indomitable will, he conquered obstacles, and rose to distinction. His master would not allow him the use of a candle for reading by, and he substituted pine knots; and at the age of thirty-four years he had completed law studies, and was admitted to the bar in Georgia, in which province he was then residing. He was active in promoting the Revolution in that region; and from February, 1776, until the autumn of 1781, he was a delegate in Congress. Mr. Walton was also in the military service in the defense of Savannah in 1778, where he was dangerously wounded, and was chosen Governor of the State in 1779, and again in 1789. Six times chosen a Representative in Congress, twice Governor of the State, once Senator of the United States, and four times Judge of the Superior Courts, attest the ability of Mr. Walton and the confidence of his fellow-citizens.

It was just after he was chosen Governor of the State by the Legislature at Augusta that Mr. Walton wrote the following letter


You are desired to deliver to Capt Benjamin
Titcomb thirty pounds of Gunpowder for
the Use of his Company & take his Receipt
for the Same
Matthew Thornton.

I intend to go at the first opening of the spring; and, should you not go sooner, should be very happy if I could with you.

Geo Walton.

to John Houstoun, then in South Carolina, dated at the then Georgia capital, on the 2d of December, 1779:

"The object of the inclosed resolve [of the Georgia Legislature] is to have the great seal in the State. I presume it is in your hands, and therefore request that you will transmit it.

"I am desired to inform you that it is hoped and expected that you will take your place in Congress as soon as possible. I intend to go at the first opening of the spring, and should you not go sooner, should be very happy in serving with you."

Houstoun had been a delegate in Congress, and Walton succeeded him as Governor of Georgia. Fleeing before the British invaders, Governor Houstoun had carried the great seal with him.

Walton was not abstemious in his habits, and living a rather sedentary life, he suffered from gout before he had reached his meridian, and died at the age of sixty-four years.

WILLIAM WHIPPLE.

A sailor in early life, William Whipple, a native of Maine, changed his vocation at the age of twenty-nine, and entered into mercantile business in Portsmouth, New Hampshire. Honest, patriotic, and zealous, he had the confidence of his neighbors when the storm of the Revolution was rising, and they looked to him as a safe pilot. They sent him as a delegate to Congress in 1776, when he was forty-six years of age, where he gladly voted for Lee's resolution, and signed the Declaration. He held a seat there until 1779. Meanwhile he accepted the commission of a brigadier-general, and commanded New Hampshire troops, under Gates, at the battle of Stillwater. He also took part in Sullivan's expedition on Rhode Island the following year. Just before joining that expedition he wrote from Portsmouth (August 2, 1778) to Josiah Bartlett the letter in this collection, which opens with some remarks about Captain Landais (Samuel Adams's friend, already mentioned), who was urging the government to build large ships of war. "These Frenchmen," Whipple wrote, "who are not perfectly acquainted with our language, have a very convenient way of getting over difficulties: when they can not answer your objections, they do not understand you." He felt sure, he said, "that experience would convince them all that this plan for 56-gun ships will never answer our purpose." He thanks Bartlett for his account of the French fleet, which he hoped might meet their ex-

You inclosed a letter directed to Joshua Bartlett Esq^r & c I wish you'd recollect & inform me how you came by it —

W^m Whipple

pectations. "But," he said, "I am very apprehensive that unless they are very quick in their actions, a fleet from Britain will be alongside of them before they are ready to receive them." He alludes to a requisition lately made upon New Hampshire for troops by Sullivan, and the fact that the State was "drained of men," and declared that so many were in the public service and in privateering that there were "hardly any males left. If we send any more soldiers," he continued, "I believe they must be females. We may spare a considerable number of that sort, and have enough left for breeders." He concluded by saying, "You inclosed a letter directed to Joshua Baskett, Esq., etc.; I wish you could recollect and inform me how you came by it."

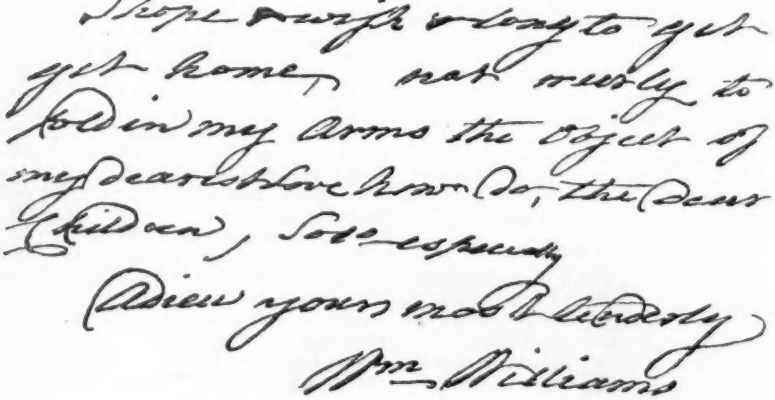
The French fleet alluded to was D'Estaing's, which had arrived off the harbor of Newport four or five days before this letter was written. A British squadron, under Howe, soon appeared. D'Estaing went out, and while both fleets were manœuvring for an advantage a gale came on, damaged nearly all the vessels, and the French were of no use to Sullivan.

ence, and helped the cause by well-written essays.

Mr. Williams served in the Legislature of his State through many terms. While he was so engaged, in May, 1783, he wrote to his wife (who was the second daughter of Governor Trumbull) from Hartford, chiefly on the subject of legislative proceedings, in which he referred to scolding about taxation, the ways and means for paying the public debts, and the extravagant sums as salaries paid by Congress. "But it signifies nothing to tell you," he said, "about disputes you are so little acquainted with;" and concluded with these words, "I hope and wish and long to get home, most sincerely to fold in my arms the object of my dearest love. Kiss, do, the dear children, sons especially!"

JAMES WILSON.

Powerful in mind and body was James Wilson, a Lowland Scotsman, who stood erect and dignified, six feet in height. He was educated in Glasgow and Edinburgh, and reached Philadelphia at the beginning of 1766, with excellent letters of recommendation, when he was chosen classical teacher



WILLIAM WILLIAMS.

On the staff of Colonel Ephraim Williams, who was killed in battle near Lake George in 1755, was William Williams, a handsome youth of middle stature, from Lebanon, Connecticut, where he was born, and where he died. At the age of twenty-five years he began a political career as town-clerk—a career which was untainted by selfishness. He worked ardently with fellow-patriots of his State in opposing the unrighteous measures of the British ministry, and was at one time Speaker of the Connecticut Assembly. As a member of the Continental Congress in 1776, he advocated with his powerful and persuasive voice the resolution for independ-

in the College of Philadelphia. He studied law, and was admitted to the bar in 1768, when he was about twenty-six years of age. He wrote and published his sentiments freely concerning the contest with Great Britain, and took an active part in the opening scenes of the Revolution. Entering Congress in 1775, he took decided ground in favor of independence, and in opposition to most of his colleagues who represented Pennsylvania, Mr. Wilson voted for independence, and signed the Declaration. He served his country with distinction all through the war, and was one of the framers of the national Constitution. Two years later he was elevated to the bench of the Supreme Court of the United States, and in 1790 was appointed

Doctor Redman and I came up Yesterday with a View to converse with Col. Bird, yourself and Captain Wood.

James Wilson

Professor of Law in the University of Pennsylvania.

Mr. Wilson's letter in the collection before me is a strictly private one, written at Belleville, New Jersey, in September, 1786, to William Little, in which occurs this sentence:

"Dr. Redman and I came up yesterday with a view to converse with Colonel Bird, yourself, and Captain Wood."

Dr. Redman was the first president of the College of Physicians, Philadelphia. Mr. Wilson was a man of strong convictions and indomitable will. His self-reliance was remarkable, and his persistence in acting in accordance with his convictions often involved him in the consequences of serious misunderstandings with colleagues and opponents.

JOHN WITHERSPOON.

Dr. Witherspoon's letter in this collection shows that the tall, dignified Scotsman, a doctor of divinity and then president of the College of New Jersey, suffered great tribulations in procuring liquor for his toddy, and reflects seriously upon the dealers in that commodity, or their agents, in the "Quaker City." Under date of "Princeton, March 9, 1770," he wrote to William Semple, a merchant in Philadelphia:

"I received yours of the 7th just now, and find that you sent the spirits away full, but they were very deficient when they came here; and I am likewise of opinion that if they were good, what remains have been greatly vitiated in quality. I wish I could know how to judge that certainly, by your sending a small quantity of the same spirits here safely. This is no less than the third time I have been served so by these shallop people, and unless some method could be fallen upon to prevent it, I must give over sending for any liquor from Philadelphia. The pens I have received. Let me know whose shallop the spirits were sent by. Whatever the event is, the quantity is large, and the gentlemen who are to take their part, I am afraid, will be disappointed."

Dr. Witherspoon was then nearly fifty years of age, having been born near Edinburgh in 1722, a lineal descendant of John Knox. After serving as chaplain under the young Pretender, suffering imprisonment until after the battle of Culloden, and officiating as a parish minister for a while, he was called to the presidency of the college at Princeton in 1767. He gave new life to that institution. The early and vigorous part which he took in the controversy with Great Britain made him a leading patriot in New Jersey, and he took a seat in Congress in time to sign the Declaration. In that

This is no less than the 3d time I have been served so by these Shallop People & unless some Method could be fallen upon to prevent it I must give over sending for any Liquor from Philadelphia—

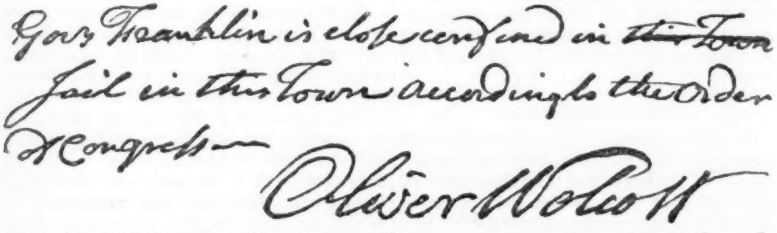
Jno Witherspoon

Congress he served faithfully for six years, for the war had dispersed the students of his college. At the age of seventy he married a young lady of twenty-three, and two years afterward he died.

OLIVER WOLCOTT.

While he was employed at home collecting and sending men to the Northern Army in the late spring and summer of 1777, Oliver Wolcott wrote a long letter to William Ellery, of Rhode Island, in his rambling handwriting, and not always lucid style, in which he touched upon various current topics. It was written from Litchfield in May, and opens with the announcement that he had just returned from the Congress at Baltimore to his "country mansion," where he hoped "to enjoy a little respite from the noise and villainy of the world—the world, which is justly called the school of wrong, and he is regarded as a most idle proficient in it, who has not only been too severely instructed in its precepts, but has a mind so tutored as to be altogether inclined to distinguish himself by such low-lived roguery as will give him the reputation of a man of ability among the knaves of his own class."

Mr. Wolcott speaks of the "Danbury affair"—the destructive incursion of Governor Tryon—and says, "Governor Franklin is close confined in jail in this town, according to the order of Congress." He was a son of Dr. Franklin, royal Governor of New Jersey, and a bitter Tory.



Mr. Wolcott's remarks about rascality were prefatory to the main topic of his letter, which is occupied with the subject of a slander, the author of which he suspects was an officer of the Continental army, "whose malice and falsehood were never yet rivaled by any man." He seems by the context to point to Benedict Arnold.

Mr. Wolcott was then fifty years of age, a native of Connecticut, and son of Governor Roger Wolcott. He had been a captain in the French and Indian war, a judge of the Court of Common Pleas, and a Commissioner of Indian Affairs. Having entered Congress in 1776, he signed the Declaration with alacrity, for he was warmly in favor of the measure. In the autumn after the above letter was written he was at the head of Connecticut volunteers, assisting in the capture of Burgoyne. A year before his death, in 1797, he was elected Governor of his native State. In person he was tall and erect, with a sedate countenance, and his manners were gentle and polite.

GEORGE WYTHE.

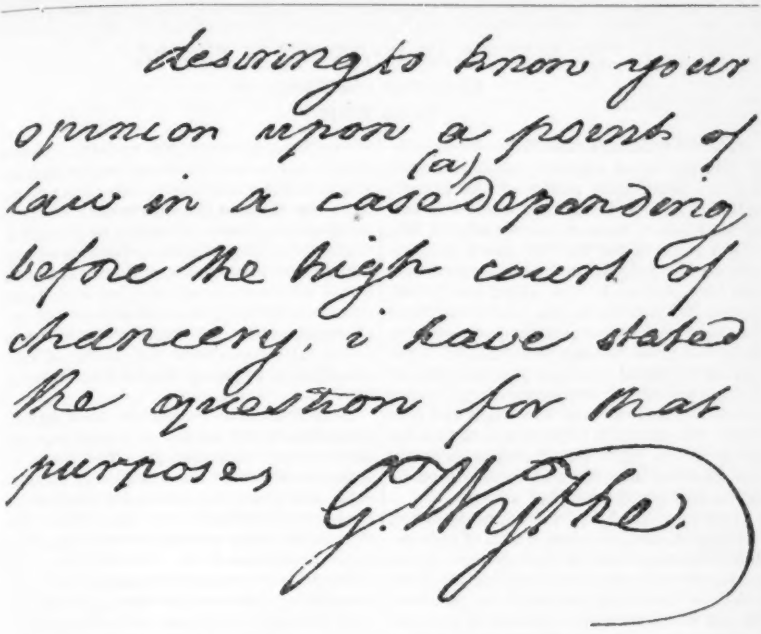
Instructed by his mother, a woman of great strength of mind and singular attainments in learning, George Wythe received the rudiments of an education which was afterward neglected. But his powerful mind soon supplied this defect, and he became one of the most accomplished Latin and Greek scholars in the country. At a very early age his mind was stored with all kinds of useful knowledge, and not long after he entered upon the profession of the law he stood at the head of the bar in his section of his native Virginia. An early advocate of the rights of the people, he was made their representative in Congress in 1775, and with Jefferson (his pupil) and others he was appointed to revise the laws of Virginia soon after he had signed the Declaration. For full twenty years he was Chancellor of Virginia.

Mr. Wythe seldom used capital letters in writing, excepting at the beginning of sentences, and sometimes not even then. In this respect his habit was an exception to a common rule. He carried the matter so far as to use the small *i* in the first person, as seen in the following letter written to Chief Justice Mercer in June, 1789:

"desiring to know your opinion upon a point of law in a case depending before the high court of chancery, i have stated the question for that purpose, and directed the clerk of that court to wait on you with it. i am, with undissembled veneration," etc.

For several years in early manhood Mr. Wythe lived a life of extravagance and dissipation, but at the age of thirty he changed his course, and from that time until his death, in 1806, when he was eighty years old, his career was exemplary. He was poisoned. The person suspected of giving him the drug was tried and acquitted.

The signers of the Declaration of Independence were all natives of the American soil with the exception of eight. Sixteen of them were from the Eastern, or New England, colonies, fourteen from the Middle,



desiring to know your opinion upon a point of law in a case depending (a) before the high court of chancery, i have stated the question for that purposes G. Wythe.

and eighteen from the Southern colonies. One was a native of Maine, nine were natives of Massachusetts, two of Rhode Island, four of Connecticut, three of New Jersey, five of Pennsylvania, two of Delaware, five of Maryland, nine of Virginia, and four of South Carolina. Two were born in England, three in Ireland, two in Scotland, and one was born in Wales.

Twenty-seven of the Signers had been regularly graduated in colleges, or about one-half. Twenty others had received an academic education, and the remainder had each been taught at a plain school or at home. Of the fifty-six Signers twenty-five had studied the institutions of Great Britain while sojourning in that country. All had something to lose if the struggle should result in failure to them. Many of them were very wealthy, and, with very few exceptions, all of them were blessed with a competence.

Thirty-four of the Signers were lawyers, thirteen were planters or farmers, nine were merchants, five were physicians, two were mechanics, one was a clergyman, one a mason, and one a surveyor. The youngest member of Congress when the Declaration was signed (Rutledge) was twenty-seven years of age; the oldest one (Dr. Franklin) was seventy. Forty-two of the fifty-six were between thirty and fifty years of age; the average age of all was forty-three years and ten months.

Not one of the Signers ever fell from the high estate to which that great act had elevated him. It has been well said that "the annals of the world can present no political body the lives of whose members, minutely traced, exhibit so much of the zeal of the patriot, dignified and chastened by the virtues of the man."

IMPROVISATIONS.—VIII.

THOUGH thy constant love I share,
Yet its gift is rarer;
In my youth I thought thee fair;
Thou art older and fairer!

Full of more than young delight
Now day and night are;
For the presence, then so bright,
Is closer, brighter.

In the haste of youth we miss
Its best of blisses:
Sweeter than the stolen kiss
Are the granted kisses.

Dearer than the words that hide
The love abiding
Are the words that fondly chide
When love needs chiding.

Higher than the perfect song
For which love longeth
Is the tender fear of wrong
That never wrongeth.

She whom youth alone makes dear
May a while seem nearer:
Thou art mine so many a year,
The older, the dearer!

BAYARD TAYLOR.

THE REPUBLICAN MOVEMENT IN EUROPE.

By EMILIO CASTELAR.

[Eighth Paper.]

III.—THE GERMANIC PEOPLES.—*(Continued.)*

CURRENTS of opposing ideas contested the reactionary power of the historic school. Against the system which converted man into a mere continuer of past life, into a slave of the ancient times and traditions, the rational and philosophical protest took ground, revindicating the human personality and its rights. However little we study the German movement, we observe these two great benefits rendered to science and to universal politics: the creation of the free and responsible personality, bearing the double seal of its divine origin and purpose; the scientific explanation of that interior law of right which claims as justly due to every man the full consecration of his faculties in the midst of society.

A distinguished diplomatist, philosopher, philologist, and historian, a man of universal aptitudes, brother of the naturalist Humboldt, the constant friend of kings, and devoted to the emancipation of the people—by one of those contradictions so frequent in Germany—a diplomate who had studied through a long series of close observations the revolution in France, the republic in Switzerland, liberty in England, art in Italy, history in Spain, which he had followed from the first words which escaped from the Basques on their cliffs to the last monuments left by the Arabs on the plains of Andalusia, in the light of all science he studied politics also, and denied that man is subjected to the traditions of his fathers as the stone is subjected to the laws of gravity. He recognizes in his soul the divine origin of conscience, and in his heart the human sentiment of liberty. He counsels him to establish himself in the strength of his sacred rights, and through this establishment of his sovereign will to educate himself by the inspirations of his own thought, seeking that native science which every man carries within himself, to expand with the development of all his faculties. For art, science, industry, politics, all good things—the *ensemble* of human purposes—are better attained if, in place of confiding the direction of life to governments which oppress and destroy his activity, and consequently the creative virtue of his labor, he trusts himself to his own natural spontaneity. Break the historical chain which binds man in arbitrary states; unite him through relations of law with other men. From our organism to our ideas, every thing in man needs society, which is the completion of his life through communication with his like. But the state, substituting its artificial laws for the laws of right, in place of strengthening, suppresses society. Therefore it is necessary to leave to the citizens the most complete liberty of action; to reduce the state to the simple duty of maintaining the general security; to prevent it from debauching religion and morals by converting them into police ordinances; to confine it within its sphere, so that it shall not transform the most laudable actions into mechanical routine, nor withdraw public education from its humane and universal ends to subject it to purely official ideas or interests.

It is true that Humboldt, after having thus defined the nature of the state, cares little for its organization. The forms of government are to him completely indifferent. But it did not escape his observation that every state reduced to the sole function of public security can only be well organized in the republican form. Give liberty, natural right, and emancipated conscience—the material of free societies—and you will see how promptly will come the organization of the republic. I have always execrated that indifference for forms which I consider the result of the greatest sophism of our time. Can a form be called indifferent when it is a revelation of all that is intelligible? I believe that the form represents in nature and in science the same which the Divine Word represents in religion—the first and most fundamental of all categories. You must reduce your thoughts to form, not only to communicate them to humanity, but to put them in order and divide them into classes; for the form belongs to the category of order; and from the point where order and form become indifferent to you you will be also indifferent to the series of the plants in botany, the zoological scale divided into species and families of diverse organisms, the heavenly space sown with constellations combined by the varying distances of the stars—all scientific systems which are reduced to a series of ideas. Social culture, the education of the human race, never could have been without this mysterious form of speech, articulated by the lips, caught by the vibrating air which bears on wings slighter than the transparent wings of the butterfly all ideas—that is to say, the whole weight of infinity. What is the difference between organic and inorganic matter? Difference of form. And would you say that the iron hid in the bowels of the earth is worth as much as the iron dissolved in the veins of man—the phosphorus decomposed into an *ignis fatuus* on battle-fields as that taken up by the growing grain and digested into nu-

triment for the brain, the temple of human thought? A mere form separates the monstrous Indian idols in Oriental pagodas from the Venus of Milo, the loveliest of goddesses, on whose lips all nature smiles, in whose eyes sparkles the ideal, in whose breast are generations of poetry and art; and these two forms, the first the spawn of the materialist pantheism, the second the divine daughter of Greek individuality, represent to all ages and generations the almost divine transfiguration of the human spirit.

The ideas of form are to politics as essential as number and lines to mathematics; as time, space, force, and magnitude to astronomy. If there is no essential difference between the republic and the monarchy, between the supreme power designated by the people or transmitted by inheritance, there is also no difference between municipal councils chosen by the citizens or by a governor of the province; between a chamber elected by the voters or by kings; between tribunals of associate judges or of only one, movable or for life, composed of judges of law or of popular juries; and, from one indifference to another, we would become at last indifferent to liberty and justice. The republic is the whole political, social, legislative organism. For that reason the republic is a new substance, a new life. To ignore this is to ignore also the rudiments of political science. That, certainly, was not unnoticed by Humboldt, when he guarded with such care the manuscript of his essay on *The Limits of the State*, which did not appear until fifteen years after his death. He doubtless feared to displease his friends the kings, who would have deduced with more implacable logic its immediate consequence, that is to say, that this great natural liberty, and this state so arranged to respect it, could not exist, except in the bosom of the republic.

This period contributed to the rise of liberal ideas and a sense of liberty in Germany. Above the tendencies of the purely historic school to justify ancient institutions predominated the tendency of the purely philosophical school to elevate natural right in the conscience, which, transformed thereby, should incarnate it in reality. Goethe, who, in spite of his Olympian indifference, took a lively interest in the problems of his time, criticised the historical school sharply, and opposed it by the fundamental thought of the philosophical school, in one of the most interesting scenes of his poem, the dialogue of the student and Mephistopheles. Says the evil spirit, in his bitter criticism:

"All rights and laws are still transmitted,
Like an eternal sickness of the race,
From generation unto generation fitted,
And shifted round from place to place.
Reason becomes a shame, beneficence a worry;
Thou art a grandchild, therefore woe to thee!
The right born with us, ours in verity;
This to consider, there's, alas! no hurry."

The poet was right. Humanity can not live merely in history. It is vain to attempt to forget what man has been, but also vain to attempt to prevent new ideas from rapidly condensing into great institutions, and nature from recovering its rights. The critical individualist philosophy, nevertheless, exaggerates the personal right of man. A reaction of nature and society against this intrenchment of man within himself, which was a necessity of the historical period, but not a necessity of all times—for this quality is reserved solely to absolute truth—a reaction of nature must come against this egotheistic science. The representative of this reaction was called Jacobi, a philosopher with the style of a poet; a man of letters, inspired in philosophical abstractions; Protestant in sentiment and rationalist by profession; a thinker almost ascetic in his natural inclinations, and a merchant by trade; devoted to all the mysteries of faith, and borne on by all the audacity of speculation; a republican by his intellectual culture, through his intercourse with the ideas of Rousseau, yet a counselor of those feudal dukes of old Germany—Jacobi, who was thus drawn by so many forces opposed to the reality, was the philosopher destined to revindicate the science of reality, lifting sentiment to the rank of criterion.

In his opposition to Fichte, whom he made the Messiah of Idealism, of which he considered the great Kant merely the John Baptist—a judgment not confirmed by posterity—he proclaims the purest faith in the immediate conscience. Thus the speculative philosophy can never know any thing of God, for God is an object of faith, but not an object of reason or of science. All philosophy must concentrate itself in the inner thought, and recognize the spirit as the subject and object at once of science. But above philosophy is absolute truth—real truth separated from purely speculative science. We comprehend nothing but what we create. Things are not comprehensible until they are transformed into ideas, and enter as ideas into the mind. The human soul in itself is not comprehensible except as a mere notion. Transcendental philosophy has demonstrated the vanity of metaphysics, and has rendered the service of returning reason to faith, and of raising above the shadows formed by pure ideas the firm and solid ground of reality.

Jacobi exaggerated the ideas of Fichte and Kant to combat their systems, which, socially considered, gave to our consciousness the highest idea of its own dignity. But while he combated two systems of liberal tendencies, he also combated the Spinozism in which the individual is effaced as merely an attribute of the one primitive, immutable being, which is revealed in its two essential forms—sensation and thought.

At the same time he combated that system which Proudhon attempted later to justify in his subtle treatise *Of Peace and of War*—that system of desolate despotism which considered man as given up to the necessity of perpetual struggle, like the beasts in the forests, and needing the iron hand of despotism to enable them to live in peace.

And after having combated these systems contrary to human liberty, he establishes political principles which may serve as the soul of all true democracy. It is true that the historical circumstances in which he published these opinions led him into some errors. It was the second half of the last century. Kings had succeeded in founding their absolute authority above the ruins of the Church which had consecrated them and nourished them in its cradle. The tragic scene of the dissolution of the Templars was reproduced in the dissolution of the Jesuits. Monarchs conspired, like the ancient Cæsars, to be emperors, generals, and high-priests—concentrating the human and Divine forces in their own authority. The philosopher, pained by this spectacle, and fearing a despotism which could uproot even the freedom of the human conscience, declared himself for ultramontanism against the regalists—for the popes against the kings. But the philosopher was not right in his preference. It is true that the European theocracy gave suck to modern civilization. The Church is the nurse of our spirit. But when it had fulfilled its transitory destiny of beginning the education of modern society, the Church ought to have disappeared as a political authority, and military feudalism should be considered as a progress—as an advance upon theocracy. And how much more should modern civil monarchies be so considered! Theocracy tyrannizes the will, the thought, the conscience, the state, the home, and its tyranny does not even pause at the gates of the tomb. It is wonderful that men of intelligence do not see the results of social transformations. The philosophic kings of the last century went forward against their will to offer their homage at the cradle of liberty—as the royal magi of the Gospel at the cradle of the Saviour.

Apart from these historical errors, the principles of Jacobi—although they have more of a moral than a political character—are essentially liberal, and even republican. Instinct finds means to maintain the society of animals in peace, he says; and shall not reason find means to maintain in peace the society of men? Order should be allied with liberty. Society can not exist without order, nor man without liberty. The world should be ruled by impersonal and inviolable justice. The state does engender right, and should be restricted to the function of taking care of the public security. The mechanism of society has its own forces and natural laws, like that of the universe. This natural mechanism of society should not be deranged by the artificial regulations of governments. Natural laws conserve and arbitrary laws limit liberty. Sovereignty resides in the living will of the people. Despotism is injurious even when it forces men to virtue; for virtue ceases to be such when it is not the conscientious work of the human will. Force should never be employed but to restrain disturbing passions. Man, given up to his liberty, will succeed in conforming his social life to the eternal reason.

Great efforts were made by the philosopher of sentiment to produce a reaction against the abstract philosophy and the exaggerated individualism of Fichte, but the greatest effort and the greatest impulse were to come from another savant—from Schelling. He was at once an original philosopher, an inspired poet, and eloquent orator. His speeches, warmed by a glowing fancy, shone red-hot before his auditory, at times dazzled and at times ecstatic, but always admiring. The former philosophy seemed like those lofty regions of the air, desolate, solitary, where sound is extinguished in the rarefied atmosphere, and the human body sweats blood. It was necessary for thought to descend to reality, to the earth, to live in the warmth of universal life, to bathe itself in the ether; to unbend, like the ancient fauns, its spirit in the fields, and celebrate once more its nuptials with nature. Such a science is partly poetry; such a philosopher needs something of the prophet. The ancient eloquence was born anew in his speech. His lips seemed perfumed by the honey of Hybla, and fresh from Platonic colloquies in Attic academies. That artistic genius which wandered in the gardens of Florence in the times of the Renaissance, which impelled the chisels of the sculptors, and mixed the colors on those magic palettes—that vivifying genius animated the eloquence of this priest and interpreter of nature. The time was prepared for a reaction toward real life. The retorts of the chemists were decomposing into gases the pure elements of Aristotle; electricity was sparkling tamely in our hands, which, armed with the recently discovered galvanism, were striving to lend movement to inert matter, life to dead bodies; and the magnetic fluid revealed in the midst of fables, of enchantments, brought new magic into the midst of the universe, as if the planet were about to bloom with more exuberant life, and to enter into more splendid heavens. Among these revelations of matter there appeared this genius of mystic tendencies, of Platonic accent, the manner of an Oriental seer, a Gnostic, like those who composed philters for the conscience from the residuum of all systems and the

fragments of all ideas. He came to raise above experience, above reason, above the mathematical standard of criticism, the half-divine intuition, the criterion which had believed itself supernatural, the property of angels, because they alone might sound the depths of being in itself, and embrace the infinite and rich variety in the absolute unity of the universe.

All knowledge supposes two terms—the object, known in itself, and the representation of the object in the intelligence. Knowledge in general is the result of the terms of contact between intelligible things and the human understanding. The sciences of observation investigate what is most intellectual, nearest the spirit in nature. Thus the universe is idealized. The sciences of pure investigation tend to the contrary, making the internal laws of the spirit exterior, making the soul objective in creation. Metaphysical science, the experimental sciences, demonstrate that the laws of the universe are also laws of the consciousness, and the reverse. Common-sense never could comprehend that the exterior world issues from spirit; and spirit, in turn, could never condescend to recognize that it proceeds from the exterior world, that it issues from nature as a river from the mountain. But there is a principle which contains these two principles—the absolute. There is a philosophy capable of conciliating these opposites—the philosophy of identity. The absolute contains in itself knowledge and existence, the subjective and the objective, the soul and nature, the real and the ideal. The power of the absolute creates, in the real, matter with its gravitation; and in the ideal, science with its principles: in the real, light and movement; in the ideal, religion and faith: in the real, life with its organisms; and in the ideal, art with its inspirations. By its real power the absolute produces that ensemble of things bound and fettered by law, that whole, which is called the universe; and by its ideal power the absolute produces that other ensemble of arts, of sciences, of religions, and of states, called history. After constant exertions, uninterrupted combats, successive elaborations, the real produces that existence which comprehends in itself all others, the crown of human nature—Man; and after wars, conflicts, Titanic labors, in which that eternal Prometheus, the human race, now rises to heaven, now falls enchained, the ideal produces that superior organism which contains in itself all social organisms—the State. After having produced in the sphere of reality man, and in the sphere of ideality the state, the absolute is reconcentrated in itself, and arrives at full consciousness of itself through reason and through philosophy.

The absolute is the total. Every contingent existence possesses relative totality. In the beginning was ether, and nothing besides. Within the ether was the potentiality of every thing. Then the Divine Word sounded in the infinite space. The molecules awakened. The force of expansion disseminated them in whirlwinds, and another force of attraction condensed them in bodies. Matter came forth, and, subject to divers conditions, took on different forms. The force of repulsion launched the worlds far from the centre; another force of attraction recalled them to the centre. Without attraction, the world would have returned to the void; without repulsion, to chaos. The primitive forces of nature are the fluids, electric, magnetic, caloric, and luminous. All the fluids bear within themselves an opposition, an antithesis. The various fluids are, after all, identical, being various manifestations of the forces of the same fluid. But the opposition is universal. Oxygen is the gas of life, and carbonic acid the gas of death. There is this contradiction in the air, like that of the positive and negative fluids in electricity. The great office of the celestial mechanism is to maintain the equilibrium of the stars—the equilibrium between repulsion and attraction. The great office of the earth is to maintain equilibrium in the atmosphere between oxygen, azote, and carbonic acid. To this end contribute storms and rains. The vegetable world is the great laboratory of gas. Organisms are divided in their turn into two opposite organisms through the two sexes. Life, which spreads itself invisibly through immensity, is revealed in organisms, as the dew, invisible in the air, is condensed in liquid brilliancy on the leaves of the tree, the calyx of the flower. Organisms are subjected to the laws of the homogeneous and the heterogeneous, as the cosmos to continual creation and continual destruction. But life rises continually, becomes ethereal, and attains to the mind of man. It sleeps in the stone, dreams in the animal, wakes and thinks in the spirit. The primitive unity reappears. But that unity which was the unformed ether in desert space is, in the plenitude of life, the spirit and its conscience.

The real is developed in the universe, the ideal in history. These two spheres of the development of the absolute at first view are dissimilar. In the universe, human forces do not control; every thing subjects itself to inevitable laws: but in history, on the contrary, every fact proceeds from the will. In the universe, phases of life succeed each other normally; animals are born and die; plants spring forth, grow, fructify; the seasons are repeated at the same periods: in history, on the other hand, ideas shine forth and are extinguished; passions are loosened and restrained; combats are undertaken and concluded; institutions are born and die; the luminous works of art, of science,

of heroism, appear and disappear; and no understanding can comprehend the mysterious laws of all these events, sprinkled by our will in the four corners of the horizon.

The universe is the region of necessity, and history is the region of liberty. Every idea is a sun in its own centre, but depending from another distant sun, toward which it gravitates—God. Every will is sovereign, but subjected to moral laws whose fulfillment can not be so necessary on the part of men as the fulfillment of the natural law among things. While the infinite is concentrated in beings, in individuals, in the finite, the concrete, within the universe; in history the finite and the limited, the individual, tends to the infinite, to the absolute, to the eternal; and thus in all the spheres of life is felt the universal aspiration for the supreme good and perfect beauty.

But the religious, the moral life is not all. There is also the public, social life. The state is a living image animated by reason, an organism where the two fundamental laws of the ideal and the real are conjoined —the liberty of history and the necessity of nature. The human will, the resultant of individual wills, does not create the state, which would then be solely an agglomeration of individuals, and which might be dissolved at the will of the citizens. The pact, the convention, far from creating the state, only disturb it or make it impossible. The state is an organism, and, like every organism, has its purpose within itself. It exists independent of the human will, and it unites the social and the individual life, the public and the private life, as it unites liberty and necessity. The state, as it is the incarnation of public reason, passes through grades of various forms till it attains the limit of perfection, which it can never pass.

Art is the permanent revelation of God. To reveal himself God chooses his prophets, the true kings by divine right—the geniuses who make the infinite visible and palpable, and incarnate it in all consciences, communicate it to all generations; knowing by superhuman intuition how to touch the mind and heart, to unite sentiment and reason, to speak to men of superior mind and to the blind multitude, to found and establish the divine religion of the ideal beauty. But if art is the permanent revelation of God, history is the permanent and successive realization of right, of the notion which most contributes to human perfection. History is progressive, and passes from necessity to fatality, from fatality to Providence; and the measure of progress is found in the grade of perfection which is reached by the notion and the realization of right. The human race goes slowly but surely to the attainment of right, and no generation can break the course of this idea, which has been indicated beforehand in the march of human progress. At the point of departure of humanity is found the notion of right, and at the end its realization. The union of all peoples in one people, of all states in one state, natural law for the only code, justice for king, good for the purpose of life—this is the ideal completely and fully realized. But man is not the absolute master of himself, because laws foreign to him, superior to him, control him. Intoxicated with liberty, satisfied with himself, believing himself the numerator and the measure of all things, counting upon his sovereignty in nature, he goes forward as if to extend his hand over the universe, until implacable necessity, seated above the worlds, assigns to him his limit, as to the star its orbit, and its bed to the ocean. Every individual has an exclusive vocation. He enters the world as if he were alone in it, uses his liberty as if it were sovereign, makes of his desires the universal aspiration of all created things, and of his interests the interests of man, until the relation of men with each other obliges him, if he would not attract a necessary punishment, to unite his life with the entire social life, and harmonize his particular will with the public will. As two forces sustain the universe, two forces sustain humanity. In the former they are called attraction and repulsion; in the latter they are called liberty and Providence. Under these necessary laws man will realize in gradual succession his rights.

And is this philosophy reactionary? Could this philosophy, whose fundamental points we have exposed, be considered in Germany a philosophy of retrogression? Among peoples accustomed to the intolerance of the Catholic Church, would not a system of the identity between the laws of the universe and the laws of the spirit pass for a system of rationalism? This alone would prove the supremacy of Germany over other peoples in scientific liberty, in respect to the thought of her savants. But there is no doubt that the philosophy of Schelling is reactionary. The republic which Kant presents as assuring perpetual peace is succeeded by the proscription of the general will and of democracy. The republican form is offered as presiding over a period of historic fatality, the monarchy as presiding over the period of Providence. The individual liberty of Fichte, which elevates the conscience so far as to heat it in the fire of divinity, which dignifies human thought so far as to make it the soul of every thing, which strengthens the will in the heroism of sovereign independence, which protests against the tyranny of facts in its impatience to realize justice, is succeeded by this idea of necessity, called forth untimely to remind the sovereign man, exalted by this new life of liberty, of his sad dependence upon nature and history. Then this same idea of progress in

such vigorous gradations, such closely linked series, requires that generations shall not pass from one stage of right to another without the general enlightenment of the reason and public will. What has become of the old, generous impatience for the realization of good? But, further, this idea of the state existing for itself requires that the citizens, instead of realizing their purpose with free and divine volition, shall be content to realize the end preconceived by the state. This state has a species of divine character like the ancient monarchies. It elevates itself in history to the same region as humanity in the universe. It rejects the general will, democracy, and confounds it with despotism. It resolves itself into a universal monarchy. It is confounded with society at large, and there is no greater error than this, because the state thus attributes to itself the power to regulate all the manifestations of life from religion to labor, whereas the human ends of justice can not be fulfilled except by the human means of liberty.

The German monarchies, with that instinct of self-preservation possessed by old and worn-out institutions, took possession of Schelling, to make of him a philosopher of authority. The King of Bavaria took him from the University of Jena, where he had taught with such brilliancy, to the University of Würzburg. From this university he passed to Munich, the second capital of German Catholicism and of reaction, which had their first capital in Vienna. The teachings of Schelling there took on every day an aspect more religious and mystic—less rational and human. During the time when the true philosophy of progress—the philosophy of Hegel—dominated in Germany, Schelling was silent for a series of years. At first the fellow-student of Hegel, and afterward his master, the philosopher of nature confessed that his fundamental thought lived in the doctrines of the pupil, though changed by successive developments and various applications. At the death of Hegel, who during all his life had concealed the transcendence of his ideas by great concessions to the Prussian monarchy, Schelling was called from Munich to Berlin, that he might with all his power and authority oppose the revolutionary and realist perturbations caused among the youth by the philosophy of the absolute. From that moment he was no more than the priest of a religious, political, scientific reaction. There was in his doctrine and in his eloquence something of the neo-pagan disorder, its magic, and its mythology; of that endeavor to check the necessary transformations of the human conscience by an appeal to the voice of nature invested with a mystic fantasy, and by an artificial revival of the genius of the gods devoured by the progress of science. As if free thought could have any other object than the truth in itself, he wished to restrict it to a commentary upon the official doctrines of religion—no more nor less than the old scholastics. Not content with this, he loses himself in the abyss of fancy, applying to magic, like the ancient Gnostics. Full of a mysticism which would have excited the envy of a Böhm or a Swedenborg, he recognized that there are in the universe theogonic forces beyond those of nature, and that those forces in their intimate relations with the human spirit and the human conscience have produced mythologies, a product also of the continual evolution of theologic thought, until one day the purification of this thought of the human spirit and the virtue of these forces bring in the only true, definite, absolute religion—Christianity—whose dogmas of Redemption, of Grace, of the Trinity, may be deduced from pure reason, and may be learned in the eternal poem of nature. All these theories had no other purpose than to satisfy the pride and please the prejudices of the crowned protector who had given Schelling but one charge—to combat the theories of Hegel. He had such regard for public opinion that he prohibited all publication of his lectures in Berlin. A treacherous disciple succeeded in collecting his lectures, putting them in order, and sending them to Dr. Paulus, who published them under the title of *The Philosophy of Revolution Revealed*—pursuing their author with vigorous argument and violent satires. Strauss, the celebrated author of the *Life of Jesus*, published a pamphlet calling the king who patronized Schelling "Julian the Apostate."

Observing the sectaries of this doctrine, the mind is the more persuaded of the reactionary consequences embraced in it, which were successively developed and extended. Eschenmayer divided history into four periods: first, the period of nature, or the despotism of the strongest; second, the period of slavery, of tyranny; third, the period of liberty, as it was understood in the old republics; fourth, the period of monarchies, which end in resolving themselves into a universal monarchy, in the manner in which the feudal lords, who were true monarchs, were lost and consolidated in the national monarchies. The very error of the Philosophy of History of Vico reappeared in these systems, distorted to give arbitrary laws to history, to represent as necessary the passage from the republic to the monarchy.

But Juan Bautista Vico confined his historic laws to the ancient world, where, it is true, the Greek republics became the monarchy of Alexander, and the Roman republic the monarchy of Augustus. But both of these monarchies destroyed these great peoples; and at the present time modern nations, with their activity and progress, do

not perish with the monarchies, but give to their living spirit the organization of the republic.

And yet the reaction went further. If Eschenmayer proclaimed the monarchy as an evident advance upon the republic, Görres proclaimed theocracy as, in turn, an advance upon monarchy. The modern world was thus going backward; the modern thought was losing itself in the fogs of the Middle Ages. Men began to doubt if there were any benefit to humanity in the employment of printing, which destroyed the slavery of ignorance. Over the Renaissance, over the Reformation, over the dawn of the modern spirit, rose a poet of Cyclopean imagination, a writer of tropical style, seeking under the marble arches of Rome the august genius of the papacy to give to the restless modern spirit, tormented by continual doubts, which resolved themselves into negations, that faith which belonged to the primitive times, that obedience of the Asiatic tribes, sleeping in peace in the shadow of their temples, in the lap of an Eden-like nature. In this desire, this magician, who had given his whole soul to the reaction, called up from their hieratic sepulchres the faith which animated the crusades, the patriarchate of Rome over the kings, the magnetic slumber of servile peoples, and even the devil, the angel fallen from light to darkness, who had filled with his temptations and his enchantments all the Middle Ages, and to whose absence from nature and history was due a loss of poetry greater than that experienced when the pagan gods breathed their last sigh beneath the ruins of the ancient world and the altar of the new dogmas. The state, for this great reactionist, was a tree in which the plebeians were to be the roots, fastened always to the earth, while the theocratic aristocracies were to be flowers painted and fruits ripened by the sun, and by the warmth of the light emanating from heaven.

Steffens proclaimed the barbarous social principle of castes, which resembled the principle of the Oriental theogonies—certain men destined perpetually to labor without enjoyment, and others destined to enjoyment without labor. Adam Müller taught that the fatalism of the cosmic laws had destined men from eternity to be as a flock, and kings to be their shepherds and leaders—theories inconceivable in this age, which has seen so many tyrannies destroyed, and liberty and right arising by the superhuman efforts of so many sublime and redeeming spirits, even to the field of the peasant and the slave-pen of the negro.

Schelling was born for communication with nature. In the serenity and constant uniformity of his life he found the peace which is rarely encountered in the sublime and giddy heights of the spirit. But when he studied society and the soul his exalted imagination spread the falsest fancies over both. Even in the very bosom of nature he appeared to return to magic, to alchemy, and to miracle. But in truth his thought listened attentively to the harmonies of nature, and found in them a universal poem. Impassible to human sorrows, indifferent to social problems, he lost himself in the universal life. In this way he arrived at a very advanced age, and died in peace in the arms of his cherishing mother, nature. Over his mortal remains the two systems of worship into which Christianity is divided mingled their prayers. In the valleys of Switzerland, by the banks of the new-born Rhine, in the midst of those dark pine forests, by the verdant pastures, near the picturesque chalets, the body of the philosopher rests in peace, in a monument erected by the piety of one of his royal pupils, and illuminated by the reflection of day on the eternal snows of the Alps—as if nature had wished to enchant with all these marvels the eternal sleep of her inspired interpreter and priest.

A VOYAGE TO THE FORTUNATE ISLES.

THE FABLE OF A HOUSEHOLD.

"Yes, but I fear to leave the shore.
So fierce, so shadowy, so cold,
Deserts of water lie before,
Whose secrets night has never told,
Save in close whispers to the dead.
I fear," one vaguely said.

One answered: "Will you waver here?
As wild and lonesome as the things
Which hold their wet nests year by year
In these poor rocks are we. Their wings
Grow restless—wherefore not our feet?
That which is strange is sweet."

"That which we know is sweeter yet.
Do we not love the near Earth more
Than the far Heaven? Does not Regret
Walk with us, always, from the door
That shuts behind us, though we leave
Not much to make us grieve?"

"Why fret me longer, when you know
Our hands with thorny toil are torn?
Scant bread and bitter, heat and snow,
Rude garments, souls too blind and worn
To climb to Christ for comfort: these
Are here. And there—the Seas.

"True, our great Lord will let us drink
At some wild springs, and even take
A few slight dew-flowers. But, I think,
He cares not how our hearts may ache.
He comes not to the peasant's hut
To learn—the door is shut.

"Oh, He is a hard Master. Still
In His rough fields, for piteous hire,
To break dry clods is not my will.
I thank Him that my arms can tire.
Let thistles henceforth grow, like grain,
To mock His sun and rain.

"Others He lifts to high estate—
Others, no peers of yours or mine.
He folds them in a silken fate,
Casts pearls before them—oh, the swine!
Drugs them with wine, veils them with lace;
And gives us this mean place."

"Well. May there not be butterflies
That lift, with weary wings, the air;
That loathe the foreign sun, which lies
On all their colors like despair;
That glitter, homesick for the form
And lost sleep of the worm?"

"Hush—see the ship. It comes at last,"
She whispered, through forlornest smiles:
"How brave it is! It sails so fast.
It takes us to the Fortunate Isles.
Come." Then the heart's great silence drew
Like Death around the Two.

Death-like it was—through pain and doubt
To leave their world at once and go,
Pale, mute, and even unconscious, out
Through dimness toward some distant Glow,
That might be but Illusion caught
In the fine net of Thought.

As ghosts, led by a ghostly sleep—
Followed by Life, a breathless dream—
Out in eternal dusk, that keep
Their way somewhere, these Two did seem,
Till the sea-moon climbed to her place
And looked in each still face.

"The worm," she waking said, "must long
To put on beauty and to fly,
But"—coming toward them, sad and strong,
There was a little double cry.
"What hurts the children? They should rest,
In such a floating nest."

"Oh, Mother, look—we all are gone.
Our house is swimming in the sea.
It will not stop. It keeps right on.
How far away we all must be!
The wind has blown it from the cliff.
It rocks us like a skiff.

"We all will drown but Baby. He
Is in his pretty grave so far.
He has to sleep till Judgment. We
Must sink where all the sailors are,
Who used to die, when storms would come,
Away off from their home."

"Lie still, you foolish yellow heads.
This is a ship. We're sailing." "Where?"
"Go nestle in your little beds.
Be quiet. We shall soon be there."
"Where?" "Why, it is not many miles."
"Where?" "To the Fortunate Isles."

"Home is the best. Oh, what a light!
God must be looking in the sea.
It is His glass. He makes it bright
All over with His face. And He
Is angry. He is talking loud
Out of that broken cloud.

"The men all hear Him, in the ropes:
He's telling them the ship must go.
They'd better climb to Him." Pale Hopes
Looked from each wretched breast, to know
If somewhere, through the shattered night,
One sail could be in sight.

And Two, who waited, dying slow,
Said, clinging to their desperate calm:
"We had not thought such wind could blow
Out of the warm leaves of the palm.
Strange, with the Fortunate Isles so nigh—
Strange, cruel, thus to die."

"The Fortunate Isles?" one other cried;
"You knew we were not sailing there?
They lie far back across the tide.
Their cliffs are gray and wet and bare;
And quiet people in their soil
Are still content to toil.

"Toward shining snakes, toward fair dumb birds,
Toward Fever hiding in the spice,
We voyaged." But his tropic words
Dropped icy upon hearts of ice.
The lonesome gulf to which they passed
Had shown the Truth at last.

That wavering glare the drowning see,
With phantoms of their life therein,
Flashed on them both. Yet mostly she
Felt all her sorrow, all her sin,
And learned, most bitterly, how dear
Their crags and valleys were.

Their home, whose dim wet windows stared
Through drops of brine, like eyes through tears;
The blue ground-blossoms that had cared
To creep about their feet for years;
And their one grave so deep, so small—
Sinking, they saw them all!

To leave the Fortunate Isles, away
On the other side of the world, and sail
Still farther from them, day by day,
Dreaming to find them; and to fail
In knowing, till the very last,
They held one's own sweet Past:

Such lot was theirs. Such lot will be,
Ah, much I fear me, yours and mine.
Because our air is cold, and we
See Summer in some mirage shine,
We leave the Fortunate Isles behind,
The Fortunate Isles to find.

Editor's Easy Chair.*

WE Americans have no great reason to boast over our recent doings at Vienna, and somebody has blundered, if not done much worse, and brought scandal upon our good name. Yet, before the grand show there is over, we may be quite sure that Brother Jonathan will be on his feet again with his irrepressible smile, and it will be seen that he has had as much to do as any of his crowned associates with bringing on that congress of the arts and that festival of industry. We need not be ashamed of what our people have done to enrich labor by invention, and to breathe a generous spirit into the relations of capital and work. Our America has a pretty broad look as well as territory, and Bayard Taylor spoke for us as well as for himself when he said, at the meeting of editors and commissioners in Vienna, that a new word, "Weltgemüthlichkeit," is needed to express the best sentiment of modern life at these majestic world reunions. The word is not exactly translatable, but it means that provincialism, sect, and even nationality, are no longer to have things their own way, and a heart cosmopolitanism, a genial humanity, is now showing itself every where, and, in the language of the old song, we wish to be "all good fellows together." There is too much scolding and fighting still on earth, yet the earth as a whole is at peace; the conspicuous feuds are local, not universal; and when great companies of men of all nations meet together, they have a great common ground to stand upon, and a vast common capital of knowledge and art and enjoyment to make themselves merry over. Russia and Sweden, Germany and Italy, Persia and Egypt, China and Japan, America and England, ride and work with the same steam-power, correspond by the same telegraphs, may foot up their bills in the same numerals, and hear with pleasure the same military bands, if not probably read the same newspapers or hear them read. They can all drink, if they can not all eat, together; and while we ourselves have no personal knowledge upon the subject, it is said that Brother Jonathan has risen to a certain cosmopolitan catholicity in his social cup, and has beverages in which the Russian and the Turk, the German and the Frank, may forget their feuds and be one.

Certain men have led the way in the new and rising sentiment of humanity, and these men are not to lose their power with their lives. This assurance is a comfort for us all in these late years, and especially during these late months, that have taken away so many conspicuous persons who belong eminently to what is called the *newness*, and who have fallen before that oldest of potentates, who brings all crowned heads at last to his feet and to his dust. Maurice, Thackeray, Dickens, Bulwer, and others have carried with them to the grave the fresh interest and affection of young England; and while our America has been paying her tribute to our most emphatic champions of civil justice, Seward and Chase, word comes to us that the most pronounced leader of the new social science, John Stuart Mill, has gone with them. It is too soon to undertake to define exactly what each of these men has done, but it is safe to say that they have added something to the common treasure of mankind, and done much toward a more generous tone of thought and feeling, especially to help on that broad, comprehensive spirit of reconciliation which probably marks our time above previous ages of exclusive power or of destructive revolution. Perhaps no recent philosophical name unites so many nations, classes, and persons in its interest and influence as that of John Stuart Mill. We have no space or disposition now to analyze his system or his intellect, for we only look at him as a power in modern society. Without doubt his excellent personal character has done much to set him up among the people as a sort of father of the new times, and gathered about him enthusiastic followers of all classes and dispositions. Putting into a sentence what is said in his praise, we may say that he is looked upon as the keen and practical Francis Bacon of the new social science, while it is claimed for him that he was a Philip Sidney in generous courtesy, and a Thomas More in the sweep of his philanthropic vision. For ourselves we fancy little his dry mechanical philosophy; we find more wisdom and inspiration in many a sentence of old Richard Hooker or of Joseph Butler than in all his sensuous metaphysics and his utilitarian ethics. Yet who does not know that a good man's opinions are far from being the whole man or his character, and that one may chop logic and correct policies with Paley and Bentham and yet be full of ideal intuitions and inspirations in his life. Mr. Mill, in his theory, made short work with what the best thinkers call history, and he absurdly denied the inherence and transmission of ideal and spiritual forces in the race. Yet he himself was a noble historical force, and much of the best heart and mind of old England beat in his veins and spoke in his word, in spite of boasted radicalism and individuality.

He has certainly done his part toward the reign of good-will among men. Champion of universal liberty, as he was, he was as dead set against the tyranny of the many as of the few; and while he believed that free nations ought to intervene for the relief of all oppressed people, he was equally clear that every private man has inalienable rights that no majorities can justly abridge or take away. He becomes thus a prophet of modern society to an extent much larger than the measure of his social schemes, and his humane temper as well as his social amenity makes his name a household word, now that bolder and more dogmatic leaders have taken more hold of public opinion. There is something about the place and the circumstances of his death that gives this radical reformer a certain charm of romance and the prestige of history. This stout political reformer died at Avignon, in the south of France, in an old house there situated among thick groves full of nightingales, whose notes disguised the malaria of the vicinity, and made music for him in his daily pilgrimage to his cherished wife's tomb. What more could Petrarch have done four hundred years before—Petrarch, the movement mind of Italy then, the lover of

* Contributed by Dr. Samuel Osgood.

Laura, that blonde belle of that very Avignon where the English radical lived so long and loved and died?

It is a somewhat suggestive and stirring question, where the dominant fatherhood in modern culture now lives, and who are the teachers and leaders who are bequeathing to us the best heritage. Many of us who do not care to bow to the rule of the old celibate fathers are quite as little ready to follow the lead of the new positivists in their dominant tendency to let down what our faith and civilization have most proved into the dust, and to resolve nature and man into the mechanical play of atoms. It is pleasant to think that the choice is not between these two, and that the best culture of our time, our best literature, art, science, and education, follow a more generous faith and breathe a more exalted atmosphere. The true fatherly and motherly mind is coming up and showing the best life and thought of our time. It is talked of less than the old priesthood or the new radicalism, but it is more full of inspiration and promise, and has the best prospect of the new social empire. Parentage is itself the most memorable fact that we know, and the love that presides over true generation ought to be most interested in knowing and using the truths and powers of regeneration. Parentage carries with it the heritage and inspiration of the race, and now commands the best wisdom of the schools and ministry of letters and art. Probably, on the whole, the celibate literature of our age is of comparatively little worth, and the great reason of the inferiority of the education of the Latin nations lies in the fact that their children have been trained so much under the old ghostly formalism, and have had so little of the liberty and the life of the new age. The enlightened and earnest fathers and mothers of Northern Europe and America submit to no such rule for themselves or for their children, and with little disposition to treat their boys and girls as little paragons of perfection, they ask for them the best helps of nature and inspirations of literature, art, and life.

The more generous system has worked best; and even masters of language affirm that the Jesuits, with all their incessant rule, have turned out but few first-rate Latin scholars, and that the tongue of Rome has found its best interpreters not from their ranks, but from Northern schools. It seems odd that they repress so much of the spontaneity that seems so irrepressible in the Italian and the French. Walk through old Rome on some pleasant Sundays, and what a contrast between the stir in the streets and squares and the drill and routine of the schools! See that fellow who is strutting about with a great turkey before him, and calling heaven and earth to bear witness to the gobbler's perfections. What does he mean by all those cries and gesticulations? Is he going to sacrifice the fowl to Æsculapius, or to offer it to the garden of some brotherhood or sisterhood? No. He is asking people to take tickets in the raffle for this fat candidate for the trencher, and he is bringing to his task lungs and grimace enough to supply a company of actors for a whole week's performance. Now go on a little further, and you meet a different specimen of Italian character. There is a teacher promenading the public places, and probably meaning to end the walk at St. Peter's with his school. Like master, like boy. All are arrayed in the same regulation stove-pipe hats, and the same long blue cloth cloaks, all patterns of etiquette and pinks of propriety. In that dress they can do nothing that manly nerve and muscle and blood prompt youth to do. They must march in state, rather than walk with ease; and as to a run, it would trip them up as surely as if they were girls in flowing petticoats. Compare this starched-up troupe with a set of German or English or American school-boys or students, and what a contrast! Disgusting as is the blatant rowdyism of Oxford on Commemoration-day, where John Bull's boys bellow like bull calves indeed, there is promise of better things in that manly vigor, and our Harvard and Yale boys show the manhood with comparatively little of the rowdyism.

Switzerland has led off in the true culture of the faculties through Pestalozzi; and Germany, through Fröbel, has developed the scientific method of Pestalozzi in his effective and winning educational art. The Kindergarten is a great fact and a far greater promise. It is a sign of the new education that is to train our boys and girls for the science and the art of common life. It means to restore the old paradise and to keep the devil out. Look in upon that company of twenty or thirty boys and girls who are under the guidance of an accomplished pupil of Fröbel with her assistants. You find them at their lunch around two tables, and laughing and talking as merrily as birds hop and chatter. Glance at the spacious and airy rooms and you see little that looks like keeping school. There are flowers and pictures and birds, and every thing pleasant and enlivening. Examine the cabinet of apparatus and the specimens of work. You find no books, but here are geometric blocks of many kinds, paper and sticks for various tasks of the ready fingers and the restless fancy. Here are balls of all sizes for study and play, and the whole aim evidently is to lead the child to see nature and life for himself, and learn to know real objects instead of mere words. Now lunch is over, and a basket is brought in which holds what looks like a lump of ice covered with cloth. The cloth is taken off, and there is a large piece of clay for modeling. Squares of board are distributed to the scholars, and the clay is divided among them in due proportion, with modeling sticks of the simplest form. The teacher asks of the scholars, in turn, what they propose making, and they reply at once. One says, "I will make a plate;" another, "a basket;" another, "a house;" another, "a snake;" another, "some fowls;" another, "a bird's nest;" another, "a basket of flowers;" another, "a cake," and so on to the last scholar. To work merrily they go, breaking out now and then in a cheery song, until, with quite different degrees of success, their work is done. The bird's nest and the basket of flowers and a few other things are quite pretty, while the house and the hens may need some help from imagination to interpret their construction. But all are wide awake, and senses and fingers and thought and fancy are all astir. It is substantial education, and the foundation of wholesome labor and artistic training. This is an exercise that comes only once a week. This over, it is time to rise from

the work-bench and go to the more open room for more stirring movements, and for plays, with motions and songs that represent the farm, or garden, or workshop, and carry joy and good-will into every gesture and tone. Soon school is done, for it lasts only three hours, and the merry, rosy girls and boys come to you, as they go out, and take your hand and give you a graceful courtesy or bow that is worth more than any stately etiquette of courts.

This is a glance at the Kindergarten on Fröbel's plan, and it is evidently a method of training that allows of the utmost variety of adaptation, and invites both loving enterprise and artistic originality without limit. If Fröbel had, as some say, more ingenuity and vivacity than inspiration and depth, and if too much of his song is doggerel, and his views smack too much of materialism, these failings do not belong to the principle, but to the man, and he has started a movement which is likely wholly to revolutionize the education of children, and to tell strongly upon all ages of study. Our young people must see things as they are, and learn to observe, compare, judge, and act for themselves, or they will be a set of imbecile pedants in a world that is now calling them to have their eyes open and their hands ready, or go to the wall. If the true method is carried out, there is no danger of losing either high inspiration or solid utility. If we open our senses to nature and life, and stir ourselves bravely in all needed play and exercise, the intuitive and spontaneous faculties of the reason and will are sure to report themselves, and good healthy affections will give heart and glee to our movement. So, too, the best working training comes, and health and intelligence and good-will that start from right principles go forward bravely to their life work. All this we need, for never before were men called upon to judge and act upon such great principles and interests as now, and civil justice and social science are submitted to our judgment and vote.

This Kindergarten culture bears closely upon what is a great, perhaps the great, practical question of our time, the education of our farmers and the destiny of the land and its masters. Thomas Wright calls the working-men "our new masters," meaning, for the most part, mechanics and their helpers. It is folly to despise or disparage the working-men in this limited sense, and no wise or good man can fail to wish them all substantial emancipation and welfare. But the largest and most important class of workers are the farming class and their associates. The land is our great heritage, and the true use of it is our most essential need. Our people ought to be trained for this more thoroughly, and there are signs all over the world of the awakening of the farming interest to its rights and its duties. The mechanics have made more mark upon public opinion, perhaps, because they hang together more closely, and live in towns and cities, where they readily combine with money and fellow-feeling, and have access to the press and public agitation. The mechanics have done a great work for modern liberty, and their guilds have been for ages mighty powers in the struggle against the old feudalism. Some of the associations formed by them still alarm the organs of despotism, and the ultramontane papers speak with anxiety of the warfare of the trowel against the cross, and some sober moralists share their solicitude. They that use the plow and the pruning-hook can not tend to any such warfare; and so far as we have read the proceedings of the granges of husbandry that are rising by thousands among our farmers, they promise well for the future of the tillers of the ground and for the nation at large. It is well for them to guard themselves against the grasping policy of the middle-men, who come between them and the markets, and take more than their share of the farmer's profits, and exact more than their due for the manufacturer's products. It is well that they seek to take their crops more readily and cheaply to the market, or to bring the market nearer to their crops. What, perhaps, is the most remarkable feature in their present movement is their eagerness for more fellowship, more connection with each other and with the press, and all the helps and incentives of society, art, and literature. It is a great thing for those who own and till the soil to bring true soul to their work, and even in the symbols and costumes of their associations to show their respect for themselves and for their calling. It is well that women as well as men join in this movement, and out of all this ceremonial of the crook and pruning-hook, the sash and pouch, some substantial gain for agriculture in ideal dignity and social refinement will be won. Who knows how much the Ceres, Flora, and Pomona of the grange may do to give woman a style of dress that is good for something besides mere show, and which may join use with beauty in the future of the sex? The farm surely has all the elements of the beautiful if they are only sought out, and orchards, groves, lawns, flowers, brooks, rocks, hills, lakes, offer charms that need only good taste and social sympathy to exalt them into agencies of culture and festivals of joy. How wise it is to give the farmers the dressing of the church once a year, as is sometimes done, and what harvest-homes our America would show next November if every farming village would do its best to adorn its temple with the fruits that crown the year! But this is a great matter, and we have only a passing word for it now.

The beautiful arts are making constant advances among our people. Just now the antiquities of centuries before Christ are presenting their rich form and color to us in the Di Cesnola collection, and the charming Bethesda fountain is pouring out its waters in the Central Park in presence of thousands, who rejoice in the thrilling music and the sparkling streams. We have had the kings and queens of song to delight us, and the cry is still they come. This is well. But the great thing is to give beauty to our daily life, and throw an ideal charm over our common lot. If every potato has beauty in its blossom, and every lamb and kid has grace and glee in its movement, we who are God's nearer children should not be awkward, ugly, stupid, and dull; and we insist upon it that the coming culture should do something to lift up and set off our common lot. Idleness has had its own way too much with the arts of beauty; and the lounging soldier and the loafing courtier have borne themselves as if the farmer and the mechanic were created to make wealth and to eat dirt in their service. What is called *dress* by eminence is a relic of court etiquette; and

the wonder of our time is that while men are so democratic in their attire, and do not parade often their dignity in their clothes, women every where follow the mode of the court, and even in republican America they continue the old bondage of Versailles, and mistress and maid are eager to wear the same courtly patterns. This is an odd aspect of our time, and it has provoked a bright German author to say, naughtily, that the greatest proof of Darwinism and our descent from monkeys is our absurd aping of the modes, and that he hopes that one of these days common-sense will be the fashion, and the only effective social force, the mode, will accept its sway—a hope in which we heartily join, for the good of man as well as of woman.

If we could send to Vienna a model farm-house, with farming men and women, true specimens of our best intelligence, energy, and taste, and with character and costume as characteristic as our crops, it would be well worth the while, and would do much to save us from our sad discomfiture there. But we can not be put down either there or at home, and our essential American ideas are making their mark where blunderers can not cover them up or throw them into contempt.

We are not ashamed to let our best men and women appear abroad as specimens of what we have to show; and no man who has ever gone from us abroad has carried more original thinking and exquisite diction than the quiet poet and philosopher who has returned from Europe to keep his seventieth birthday in his Concord home among admiring and friendly neighbors. He does not belong to the old or the new hopes, but he is willing to think for himself, and to encourage others in the same freedom. As full of wit and as free from prejudice and pretension as old Montaigne, he rises with Fichte to the peaks of intellectual vision, and he is perhaps by eminence the prophet of individualism—a lonely bird who yet gathers about him a great company of loving listeners. He has about a score of remarkable disciples or associates who have made their mark in art and science, poetry, philosophy, and letters—a set as choice and as influential in their way as any living author can show. We may sometimes quarrel with him for being what he is, and not thinking and writing as others do; we may wish that he were less severely a Greek in his temper and judgment, and insisted less upon a perfection of mind and body which most of us can not have, and which Heaven itself does not ask of those who crave its grace; but, take him for all in all, he is a noble man, and broader and gentler, more loving to the household, the flag, and the race as the years roll on, more ripe and large-hearted now than when he returned from Europe over twenty years ago.

We have Ralph Waldo Emerson home now, and we add our cordial word to the greeting of his neighbors and friends. We need men like him, who never sacrifice self-respect to the tyranny of numbers, and who never forget that no gold, or power, or pleasure is worth sacrificing in its behalf whatever is true and good and trustful.

Editor's Literary Record.

RECENT ENGLISH PUBLICATIONS.

THE death of JOHN STUART MILL removes from English literature one of its clearest and ablest thinkers—one who has provoked by his thoughts more discussion, and awakened more thought in others, than any other purely philosophical writer of the present century. His autobiography has been left, it is said, nearly ready for the press, and will soon be published. Among his latest works was a new edition of his *System of Logic*, the eighth, a reprint of which the Harpers have in preparation. It is not necessary for us to enter here into any estimate of his philosophy; to attempt to do so in a paragraph would, indeed, be quite idle. It is enough for us to say that Mr. Mill has not materially modified his system; but he has availed himself of the criticism to which it has been subjected to modify some of his statements, he has replied in considerable detail to some others, and he has called to his service illustrations from modern scientific discoveries, thus bringing his book up in its thought to the latest phase of scientific development. He discusses with remarkable acumen the relations of the new theory of the correlation and conservation of forces to the doctrine of causation (Book III., ch. v., § 10), and argues with vigor against the doctrine revived in modern theology in opposition to materialism, viz., that personal will is the only efficient cause, and consciousness the only adequate evidence, of causation (§ 11); he devotes a chapter to a discussion of the doctrine of chance (Book III., ch. xviii.), and another to a consideration of the objections made to his doctrine of causation from the standpoint of free moral agency (Book IX., ch. xi.). These, with some answers in detail to special criticisms, are the most important alterations in this edition: they bring it down to the latest point in time, and add materially also, especially in illustration, to the value of the work.

The name of the author, rather than the character of the book, gives interest to the *History of the Christian Religion*, by JOHN, Earl RUSSELL. It professes to trace the rise and history of Christianity to the end of the Council of Trent. The principal aim of the author appears to be to show the simplicity of the religion of Jesus Christ in contrast with the elaborate ritualism of Rome, and the elaborate doctrinal systems which are the products of the attempts of the schoolmen to adapt the dialectics of Aristotle to the Christian system, or rather, to speak with greater accuracy, to adapt the precepts and principles of Jesus Christ to the dialectics of Aristotle. It is, nevertheless, theological in its tone, and its author would probably be classed among the Arians, though he avoids all scholastic phraseology. But the work shows very little evidence, in subject-matter or in style, of being

the product of either an erudite scholarship or of profound original thought. The quotations, which are numerous, from other authors who have traversed the same ground, present the appearance of being gleaned from a somewhat narrow field of reading, and the whole work leaves the impression upon the reader that the author has been a busy man, whose life has been immersed in other affairs, but whose active mind has concerned itself, with no inconsiderable vigor, upon some of the religious problems of the age, and who has put together in this volume the result of reflections which were begotten of leisure hours and of desultory studies. Thus, for example, the statement on page 14 that the object of Jesus Christ was to restrain the passions of love between the sexes and of resentment, if intended as a comprehensive statement of his mission, is one which is almost ludicrously inadequate; and the intimation on page 102 that the abuses respecting papal patronage were the cause of the Reformation is indicative of a scarcely less superficial view of religious history. As a brief, compact, and not uninteresting history of Christianity, the work will be useful; as an attempt to set forth the simplicity of the religion of Jesus, freed from modern additions and refinements of doctrine, discipline, and ritual, it is commendable, though not always successful; as a true disclosure of the philosophy of the history of Christianity, it is remarkable alike for its suggestive thoughts and for its singularly superficial and inadequate interpretations of events.

PHILOSOPHY.

Any discussion of the metaphysics of Herbert Spencer would carry us far beyond our prescribed limits. No criticism confined to a paragraph could do him or his subject justice. We must therefore confine ourselves to stating that what is in form a new edition of an old book, but is in fact a new work, *Principles of Psychology* (D. Appleton and Co.), is now completed by the publication of the second volume, and to intimating in a few sentences the character of the work. Mr. Herbert Spencer unhappily not only deals with abstruse themes, but writes upon them in a style so abstruse that not merely the public, but also the best critics, appear perpetually to misapprehend his meaning. He is ranked among the skeptical writers, but the chief object of this volume appears to be to overturn the skepticism of Berkeley and Hume, and to establish on a strong foundation belief in the reality of things, and the truth of the testimony of perception and consciousness. He is accused of atheism. He sums up the conclusion of his two volumes in the following words: "Once more we are brought round to the conclusion, repeatedly reached by other routes, that behind all manifestations, inner and outer, there is a Power manifested. Here, as before, it has become clear that while the nature of this Power can not be known, while we lack the faculty of framing even the dimmest conception of it, yet its universal presence is the absolute fact, without which there can be no relative facts." He is ranked with the rationalists. He declares with his accustomed vigor that "by extinguishing other superstitions Reason makes itself the final object of superstition. In minds freed by its help from unwarrantable belief it becomes that to which an unwarranted amount of belief is given." We do not undertake to defend, nor yet to criticise, nor hardly to define the philosophy of Herbert Spencer, but so far as this volume interprets it that philosophy is pantheistic rather than atheistic, intuitive rather than rationalistic, and realistic rather than, in the philosophical sense, skeptical.

Physics and Politics, by Walter Bagehot (D. Appleton and Co.), is the second volume in the International Scientific Series. The author addresses himself to a discussion of the problems of human progress, and the conditions which produce and those which retard or prevent it. His explanation of human development is, in brief, the application of the principles of "natural selection" and "inheritance" to the social organism. In the struggle for existence the nation which acquires elements of strength has the advantage of its neighbor. Certain individuals in the nation happen to hit upon an improvement in thinking, in acting, in literature, art, government, sociology; the principle of imitation, the same principle which makes the unthinking crowd cheer first the liberal, and then the conservative orator, leads the nation to follow its leader; if the idea really makes for the strength of the nation, it endures; if not, it perishes. Thus the freedom with which the community is permitted to follow the impulse, and so try the thoughts of its leaders, is the condition of success. There is no progress in China because there is no freedom. If the freedom and the readiness to imitate be too great, stability is wanting, and so no permanent progress is assured. How it is that the genius *happens* to hit upon the element which is to add strength to the nation does not appear, this modern theory in this as in most of its applications being content to carry us back to chance as the inspiration of growth, and leave us there. Mr. Bagehot's treatise is purely theoretical; he makes no attempt even to consider what, in our social and national life, we are to do to secure a healthy and permanent progress. In style he is exceedingly clear, and his illustrations, some of which are of a very homely and plain character, make his book both lucid and entertaining.

Dr. I. Ray's *Contributions to Mental Pathology* (Little, Brown, and Co.) consist for the most part of papers previously printed in American periodicals, chiefly, we believe, the *American Journal of Insanity* and the *American Law Review*. This fact gives to the whole book a fragmentary aspect, which seriously detracts from its value. Some of the papers are discussions of particular cases in which the mental soundness of an accused was in question, but which have passed wholly from the public mind, and are of interest only as they illustrate some principle, or present in a striking manner some question for consideration. We find the same criticism recurring to our minds in reading this mosaic of treatises which the author applies to the judicial decision of Chief Justice Shaw: "He returns again and again to qualify what he has said, or to add some condition for the purpose of enlarging or restricting the range of its application. As might be supposed, his ideas lack precision and lucid arrangement, and the reader is not always sure of his exact meaning." A still more serious defect grows out of what would be perhaps at first regarded as the

author's peculiar qualification for his task. Mental pathology is a specialty with Dr. Ray; and, like most specialists, he sees his specialty so clearly that he fails to apprehend its relations to other cognate subjects. The popular view regards insanity as a definite mental condition, always capable of being clearly defined, and if sufficient opportunity of investigation be afforded, certainly adjudged. But science recognizes the truth that sanity melts into insanity as health does into disease. In the popular sense of the term, insane persons are rare. In truth, perfectly sane persons are the exception; the number who are perfectly healthy in mind and moral impulses being probably quite as few as those who are perfectly healthy in all their bodily organs. This Dr. Ray perceives very clearly, and brings out, though indirectly, very forcibly; but when he attempts to lay down the principles upon which society should determine how much and what kind of mental or moral disease renders its victim irresponsible for his acts, his special knowledge of mental unsoundness absolutely unfits him for his task. He sees lunacy in every mental disorder, and finds palliation for crime in every perturbation of the nature. If courts were to adopt *his* principles we should presently do away with State-prisons altogether, and have nothing but lunatic asylums. If, as he appears to claim, a crime committed without an apparent motive is of itself adequate proof of insanity and irresponsibility, then, by a parity of reasoning, a crime committed with inadequate motives should also constitute such evidence, which would do away with all punishment, and leave us no crime to be punished, only "moral insanity" to be cured. On the whole, we judge Dr. Ray's book to be useful rather for its suggestions than for its conclusions, and rather for its criticisms on current opinions than for any clear elucidation of legal or moral principles for the determination of the delicate and difficult question of personal moral responsibility.

RELIGIOUS.

The fifth volume of M'Clintock and Strong's *Cyclopedia of Biblical, Theological, and Ecclesiastical Literature* (Harper and Brothers) lies before us. It includes the letters K and L and a part of M. We have had occasion to speak of this work so frequently that it seems hardly necessary to do more than announce the appearance of this volume. It is nevertheless due to the editors to say that their work appears to be improving in quality as it progresses. When, as in the article "Matthew, Gospel of," opposing views are referred to, the contrast between them is clearly recognized, and the two views are succinctly given. The list of American authors in the preface confirms the impression of originality made by the work itself; and the fact that the denominational articles are contributed by leaders in the respective denominations gives evidence both of accuracy and of catholicity in the theological department. We observe among the contributions to this single volume the names of representative men in the Methodist, Lutheran, Episcopal, Dutch Reformed, Congregational, Presbyterian, and Baptist denominations. This commingling of Christian men of all sects in a common endeavor not only to extend their common faith, but to give to the people accurate and trustworthy information concerning doctrinal and ecclesiastical systems from which they dissent, is a characteristic and significant indication of the spirit of the age; and the fact that this work is under the charge of men who are so heartily in sympathy with that spirit renders it, as a dictionary of ecclesiastical and theological topics, without a peer. In fact, there is in these departments no work in the English language which can even be compared with it.

There are laid upon our table, from the press of Scribner, Armstrong, and Co., three commentaries on Matthew—one by Dr. Owen, one by Dr. Alexander, and one by Dr. J. P. Lange, edited by Professor Schaff. Each is entitled "Sunday-school Edition," and this circumstance, coupled with the fact that when this number of the Magazine reaches our readers not a few of them will be engaged throughout the various Sunday-schools of the country in a course of lessons upon the Gospel of Matthew, leads us to group here in a compact form some information respecting the Sabbath-school helps for their benefit.

Why the volumes now before us should be entitled Sunday-school editions we find it difficult to surmise. They are unmistakably printed from the old plates; if there is any difference in the edition, it is simply in paper and binding.—Lange's *Commentary*, which, when completed, will cover the whole Bible, and comprise over twenty-five large volumes, is of eminent value to scholars; but for practical use by Christian workers, whether lay or clerical, it would have been vastly more serviceable if it had been adapted to the American wants by a process of selection and condensation. It exhausts the student as well as the subject, and mixes so much of sound scholarship with so much of profitless conjecture or profitless discussion that one who possesses it is equally unwilling to use it or to leave it unused. Thus, for example, to an ordinary reader of the account of the temptation of Christ, the elaborate classification of the various theories which have been propounded by different scholars will be more confusing than helpful, and the elaborate attempt to analyze the Lord's Prayer and educe from it a body of divinity does far more to deprive it of its beauty of simplicity than to help to a clear and spiritual apprehension of its meaning.—Dr. Alexander's *Commentary on Matthew* is not equal to that on Mark by the same author, and the fact that it comes to an abrupt conclusion at chapter xvi., while it adds to the interest of the volume as a memorial, seriously impairs its value as a practical help to the Bible student.—Dr. Owen's *Commentary* is in size and style patterned very much after that of Mr. Barnes, but does not equal the original model, and does not indicate as wide, patient, and painstaking a research. It is, however, somewhat more concise than Barnes's, and occasionally considers important difficulties which the latter passes by in silence, as the question of the true interpretation of the temptation of our Lord.—Alford's *New Testament for English Readers* is an adaptation of the author's *Greek Testament;* it was prepared by Dean Alford himself, or under his supervision. It is an exceedingly useful book, both for its scholarship and its spiritual suggestiveness; but it falls so far short of the original work that it

is a perpetual disappointment, at least to one who is accustomed to the use of the latter. It was a sad mistake to omit the quotations from the ancient fathers; they should have been retained, but translated. The best part of Dean Alford's commentary is the volume on the Gospels, and of the commentaries on the Gospels that on Matthew is the fullest. Whether the volumes are published separately or not we do not know. The Greek Gospels are published in one volume by the Harpers.—Of JANNESSEN FAUSSETT and BROWN'S *Commentary on the Bible*, volume fifth, on the four Gospels, is perhaps the most satisfactory. Dr. Brown's notes on Matthew are admirable, less perhaps for any erudition, though that is not wanting, than for a certain spiritual appreciation of the significance of Christ's words, which is quite remarkable.

BARNES'S *Notes on the Gospels*, of which a new and illustrated edition has been recently issued by the Harpers, is confessedly without a superior as a Sabbath-school help. It exhibits, indeed, a denominational bias in the discussion of some questions, but it is never unfair or unpleasantly controversial. It passes by some questions with inadequate explanations, but it does not pretend to solve them by flinging epithets at others who are perplexed by them. As a source of information concerning Jewish manners and customs it has no equal, and its practical suggestions and reflections, though not always strikingly new or fresh, are never mystical; they are always, in truth, both comprehensive and practical.

Dr. ADAM CLARKE'S *Commentary* needs no commendation from us. It is a misfortune that the Methodist Book Concern does not issue an edition in a more compact and convenient form. Dr. Clarke is not always a safe guide, but he is an honest, impartial expositor, who studies only to get at the meaning of the sacred writers, and who in that endeavor is impeded less by his prepossessions than almost any commentator with whom we are acquainted, unless it be Dean Alford. Of other commentaries more or less distinctly denominational our space does not allow us to speak, even if our inclination prompted us to do so. There are, however, other helps to the study of the Gospel of Matthew which deserve at least mention. Among the most important of these are *Trench on the Miracles* and *Trench on the Parables*, which constitute a wonderful thesaurus of information on the topics of which they respectively treat, and are especially valuable to mature students; ABBOTT'S *Jesus of Nazareth*, which, of all the various lives of Christ, is the fullest in historical information and in descriptions of contemporaneous social and moral life; HANNA'S *Life of Christ*, which is the warmest and richest in devotional feeling; Dr. SMITH'S *New Testament History*, which contains a connected narrative, in chronological order, of the entire New Testament history, and embodies in notes a great deal of valuable information not readily to be found elsewhere. It only remains to be added that of all the various editions of the Bible to aid the student there are none superior to Bagster's editions, of which there are several in different forms, some containing maps than which nothing finer in sacred geography is published.

NOVELS.

A Fair Saxon, by JUSTIN M'CARTHY (Sheldon and Co.), produces the impression on the mind of being the production of one who has observed much, but read more, and who combines in his pages the culture which comes of casual reading of many novels, and casual observation of much life. It is not, in the highest sense of the term, an original novel. It bears no evidence of containing any deliberate plagiarisms, but it constantly reminds us, alike in incident, character, and description, of what we have read elsewhere, though so vaguely that we never fully identify the likeness. The plot turns on an impossible will, which gives a faint suggestion of the plot of the *Wandering Jew*. There is a large amount of plotting and counterplotting, and yet the story is not vexatiously intricate. There is enough of connection with recent events to give it a certain timely interest, but not enough of either strong characterization, or suggestive thought, or true pathos to endow it with permanent life.

Those readers and critics who suppose it to be the exclusive function of fiction to hold up the mirror to life, and who therefore judge that any novel to be good must be above all things "natural," will find abundant cause to criticise Mrs. A. D. T. WHITNEY'S last story, *Other Girls* (J. R. Osgood and Co.). It is intended not to describe society as it is, but to picture it as Mrs. Whitney thinks it should be; not to tell us what we are, but to incite us to nobler aims and life by introducing to the imagination a social millennium—if not the full day, at least the early dawn of it. It is, therefore, characteristically an ideal story, almost as truly so as the Prodigal Son, whose father certainly did not act according to the common principle of fathers under similar provocation. It is full of religious thought, pure, warm, healthful, in which, indeed, there is intermixed a certain measure of Swedenborgian mysticism, but as the poetry rather than as the theological doctrine of religion, always in spirit so tenderly and lovingly Christian that he must be a very perverse critic who could object to it on denominational or theological grounds. Its chief fault is the introduction of too many characters, and the weaving together of too many threads; not less than four separate love affairs run through the pattern, and yet love is in truth rather an incident than the essence of the story. It is a mistake, too, to introduce characters from previous books with the assumption that the reader will know them already. Its chief merit is not the skill with which many of the characters are drawn and some of them gradually developed, nor the sparkling thoughts with which it abounds, nor the ideal pictures of social life which it presents, nor the direct religious truths it inculcates, but the wholesome, cheerful, bright-hued views of life, and the warm, devout, sincere, and wholly unconventional Christian spirit which pervades all its pages, and makes it as healthful as it is delightful.

A Chance Acquaintance, Mr. W. D. HOWELL'S first novel (J. R. Osgood and Co.) is almost a good novel. Of course it is delightfully written, with that easy and indescribable grace which gave to so very commonplace a theme as "Their Wedding Journey" a character such as no other American writer could have imparted to so sim-

ple a narrative. But, besides that, the characters, especially the two leading personages, Kitty and Mr. Arbuton, are exceedingly well drawn, though we protest that the latter is but a sorry representative of a Boston aristocrat, or, indeed, of an aristocrat of any locality. Yet the story comes to such an untimely end, and so provokingly withal, that it is impossible to come to any other conclusion than that Mr. Howell wrote his novel experimentally, to see if he could write a novel if he were to try, and having written far enough to satisfy himself on that point, dropped it, that he might make a new beginning with one more carefully framed. If this hypothesis be the correct one, we hope the next novel may be soon forthcoming: this experiment justifies great expectations as to the success of any well-considered work of the same sort.

Rouge et Noir, by EDMOND ABOUT (Claxton, Remsen, and Haffelfinger), is a clever French vaudeville which one reads through without difficulty at a sitting, and dismisses from his thought when he turns the last page. There are only three characters in the story; the rest are mere supernumeraries, though they perform their parts very nicely. We should not recommend it as a tract to the cautious father who wished to guard his son against gambling, or his daughter against romantic love engagements with mysterious strangers. However, if one will shut his eyes to whatever moral the story may contain—and there is not much to see if he scans it ever so closely—he may get a good deal of innocent entertainment out of it, and be neither wiser nor worse for the hour he has devoted to it.

The Hour and the Man, by HARRIET MARTINEAU, (Harper and Brothers), is aptly described on its title-page as "a historical romance." The hour is that of the St. Domingo revolution; the man, Toussaint L'Ouverture. The history of that revolution is itself a romance, one of the wildest and fullest of surprises of any furnished by history. The danger in a historical novel founded on such an epoch is that of falling short of the actual romance of events, or of taking that proverbially short but dangerous step which leads from the sublime to the ridiculous, by an attempt to color a scene whose contrasts need no heightening. Miss Martineau has fallen into neither extreme; the simplicity of her narrative imparts to it such an air of realism that only one thoroughly versed in the history of the great African leader can tell what is truly the work of the historian and what the addition of the novelist. From the opening chapter, which describes the first uprising of the negroes, to the end, the cruel treatment of the noble African by the ignoble Frenchman, himself to become in time a captive, the story never halts and the interest never flags.

POETRY.

Red Cotton Night-cap Country (J. R. Osgood and Co.) is the somewhat enigmatical title of Mr. BROWNING'S last very enigmatical poem. It is a volume of over two hundred pages, and is quite as mystical in its pseudo-philosophy and quite as obscure and perplexing in its twisted and tortured sentences as any thing he has ever written; nor does it contain in any large measure the flashes of his peculiar genius. It is, or to the great majority will be, an intolerably wearisome book, and we venture the assertion that even of the critics who write glowing eulogies upon it only a very small minority will ever read it through. There are some books which are condemned by the critics, but read by the people; there are others which are applauded by the critics, but read by nobody. *Red Cotton Night-cap Country* belongs to the latter category. It may be readily imagined that we have not read it through; nor have we: it is not necessary to traverse every square mile of the Great Desert to know that its scenery is tame. We have read enough to know both the story and the manner in which it is told, and to enter our strong protest against the endeavor to glorify an illicit love with one who had been in succession a profligate woman and an unfaithful wife. The very abstruse and scarcely comprehensible moral which is tacked on at the close does not save the story from its essential spirit of immorality. Neither does the pseudo-satire on Romanism relieve it in any wise. It can only be characterized as harmless because the class of people who would be liable to be harmed by it will not understand nor even read it.

A Fo'c's'le Yarn (Macmillan and Co.) originally appeared in *Macmillan's Magazine*. It is a poem in dialect, the dialect being, we believe, intended to represent that of the Isle of Man. As to the accuracy of the representation we can not speak, but the yarn is of a kind with which we judge the "fo'c's'le" is not very often acquainted. It is a story of love, of rivalry, of a broken heart; a story which gives abundant opportunity for foul innuendo, but which is as pure in sentiment as it is rough in language. Even the occasional profanity is redeemed from vulgarity. If *Red Cotton Night-cap Country* is a parlor poem, and *Betsey Lee* a "fo'c's'le" yarn, the sooner the parlor gets rid of its own literature and borrows a substitute from the "fo'c's'le" the better.

MISCELLANEOUS.

ONE who has spent a quarter of a century in close personal and political affiliation and companionship with the public men of the nation, and then sits down to talk of what he has seen of them, to gossip of them and their doings, must necessarily be somewhat egotistical in his gossip. If the "I" were left out the personal interest in the narrative would vanish. Mr. JOHN W. FORNEY'S *Anecdotes of Public Men* (Harper and Brothers) are not more egotistical nor more gossipy than the reader likes to have them for his own enjoyment. There is no order or continuity of narrative. The book will be one of peculiar interest as one of reminiscences to those who have known the men and events of which it treats. It will be hardly less entertaining to younger readers as a memorial of men who were influential in their day, and as a history of measures and questions which once agitated the whole country, but are now well-nigh forgotten. Mr. Forney is emphatically a "newspaper man;" his repute is that of one who knew with peculiar intimacy the secrets of political life, the members and the conferences of the "kitchen cabinet," and he has used the literary aptitude acquired in the one position to gossip in a very entertaining manner about the facts of which he became cognizant in the other.

Editor's Scientific Record.

SUMMARY OF SCIENTIFIC PROGRESS.

THE month of May has not passed without its contribution to the annals of *Astronomy*. The return of the second comet of 1867 has added another to the list of periodical bodies of this nature; and Professor Peters, of Hamilton College, announces the discovery, on the 20th, of the 131st asteroid. The valuable discussion of the respective merits of Halley's and of Delisle's methods of observing the approaching transit of Venus has been continued by Airy and Proctor, and is now probably definitively settled, since it seems that it is important to provide for putting both methods into execution. The extensive preparations being made by the Russian government for this great international work are suggested by the statement that twenty-four stations will be occupied by her astronomers, and her navy will carry out a special geographical expedition in connection with the work. In the matter of the improvement of our means of observation, it is worthy of note that Dr. Gould has succeeded in so repairing his photographic telescope that it is confidently hoped we may soon have valuable photographs of the stars of the southern hemisphere, such as Bond and Rutherford have given us for the northern skies. The laborious and thorough examination by Dembowski of the micrometer with which for twenty years his admirable double-star measurements have been made has shown the existence of errors in that refined instrument that have been hitherto unsuspected, and will serve to arouse attention to the necessity of improvement; at this juncture possibly some will turn to the very simple and quite different construction just proposed by Noel as an improvement on the double-image micrometer, in which the micrometer *screw* is quite dispensed with. As our instruments improve, our knowledge of the heavens keeps equal pace. After the first brilliant discovery of the companion of Sirius, made with the Chicago refractor before Mr. Clark had finished its construction, it was hoped that the new and far superior telescope now being made by him for the Washington Observatory would have already been distinguished by the discovery of the companion of Procyon, whose existence was theoretically demonstrated some years ago. In this, however, Americans have been, by a few months, anticipated by the activity of the eminent director of the Imperial Russian Observatory at Pultowa, who announces that after a long search the star has been found and observed by himself and his assistants during the month of March. This brilliant result of Struve's labors must be considered as one of the most gratifying indications of the value of the observations and calculations of the many astronomers who have busied themselves with this subject. It is noted with much satisfaction that in America an occasional amateur astronomer is found busy with his telescope, and the catalogue of eighty-one new double stars by Mr. Burnham, of Chicago, is a promise of still better things. A highly interesting contribution has been made by S. W. Williams, the secretary of the Royal Astronomical Society of London, and himself an able scholar of the Chinese language and literature, in that he has compiled a list of the sun-spots observed since the year 206 by the astronomers of that empire. The works from which Mr. Williams's list is compiled were published in China before the application by Galileo of the telescope to astronomy. Mr. Williams has also in his work on Chinese comets given many cases of their observations of meteors and other remarkable stars, so that the accumulating materials promise at no distant future to form a very complete history of astronomy. The application of the resources of astronomical observatories to the wide distribution of accurate standard public time continues to attract the general attention. Through the Western Union Telegraph Company the city of New York will soon be specially favored in this respect. At present the government buildings at Washington—that is, the War, Navy, and Treasury departments—as well as some others, are provided with Hamblett's electric clocks, which are controlled by continuous currents from the standard clock at the National Observatory. In the more difficult departments of astronomy we have a review by Wagner of Secchi's supposed discovery of a periodical variation in the diameter of the sun. Wagner shows that nearly twenty years of the most accurate modern observations do not justify Secchi's conclusions. Leverrier has presented to the Paris Academy of Sciences his complete mathematical formula for the motion of Jupiter about the sun. A theoretical investigation of the motion and nature of the rings of the planet Saturn has been published by Hirn, and is said to be a valuable work. His conclusion that the rings must be composed of small fragments in close juxtaposition does not seem to differ from the results of the studies of Pierce and Maxwell.

In *Terrestrial Physics and Meteorology* we chronicle the recent establishment by the Army Signal-office of an observing station on Mount Mitchell, in North Carolina, and the promise of another on the summit of Pike's Peak, Colorado. A new theory is proposed by Tarry, accounting for the sand-showers of Southern Europe by the action of oscillating cyclones. The annual report of the Canadian system of storm warnings shows that over a hundred observing stations are doing good work gratuitously in that Dominion. A tornado passed over Iowa on the 23d of the month which was one of the most destructive on record in that region; very many lives were lost. Brown continues his researches, and announces a twenty-six day period connecting the fluctuations of the barometer and the magnetic needle. A very unexpected announcement is made by Muhry that the researches of Meissner show that clouds would not be produced in our atmosphere were it not for the presence of oxygen. Jelinek has, like many others, given some time to the investigation of the solar-spot period in the rainfall which was recently announced by Lockyer, but can find no convincing proof of the existence of any connection of this sort. On the origin of atmospheric electricity Muhry has contributed somewhat by way of a paper on the geographical distribution of the electrical phenomena. Marchand has given the results of four years of observation with an actinometer of original con-

struction, by which he arrives at the power of the solar rays to effect the decomposition of carbon compounds.

In the department of *Electricity* we notice an excellent article by Boboulieff, giving as his results, after careful observation, that the dispersion of electricity depends on the temperature and pressure of the surrounding gas, as well as on its nature. The important question of the magnetism of iron ships has received a great addition in the elaborate memoir of Professor Harkness, just published by the Smithsonian Institution.

The death of Professor Hansteen on the 15th of April, in his eighty-ninth year, removes from us one of the founders of the modern science of terrestrial magnetism.

In *Chemistry* Violette announces that he has succeeded in fusing fifty grams of platinum in an ordinary wind furnace, though, as he used coke for fuel, it is suggested that the fusing-point of the metal may have been lowered by the formation of compounds of carbon, silicon, or even sulphur with the platinum. Debray shows that the purple of Cassius is only a lake formed by the mixture of finely divided gold with tin hydrate. He has succeeded in forming a similar color with alumina. The character of hydrogen when in a state of occlusion by palladium has been investigated by Roberts and Wright. They conclude from its specific heat that the compound body is not an alloy, as Graham had supposed, but that it is a chemical compound; that, moreover, since palladium and hydrogen may unite in any proportion, each several charge must be regarded as giving rise to a distinct compound. The atomic weight of thallium has been redetermined with great care by Crookes, and found to be 204.008. Berthelot has continued his valuable researches in thermo-chemistry, and has announced the following law concerning the mutual decomposition of salts in solution: That salt whose production evolves most heat is the salt which is formed in solution whenever the salts from which it can be formed are present in the state of partial decomposition in the liquid. This state of partial decomposition in presence of water, Berthelot shows to be the fact with most salts. The above law concerning salts in solution he generalizes as follows: Every chemical change effected without the agency of external energy tends to produce that body, or that group of bodies, in whose formation most heat is set free. Gautier has given some experiments to prove that elemental allotropism—a fact hitherto regarded as a consequence only of elemental molecular condition, and hence not capable of existing in combination—does actually exist in compound substances. His results were obtained with phosphorus, and he cites some of its compounds in which he believes allotropic phosphorus to exist.

In *Technical Chemistry* Crace Calvert has experimentally classified antiseptics. He finds cresol to be the only substance examined which destroys vibriones at once, and also prevents their reappearance. Phenol, which prevents their formation, does not destroy them completely after they are formed. Sulphuric acid, on the other hand, destroys them completely, but does not prevent their subsequent development. Zinc sulphophenate does both. Corrosive sublimate destroys them partially, but favors the development of the remainder; originally added, however, it prevents their formation. Jacquez has proposed borax as an antiseptic. A note sealed by him in 1857, and recently opened by the French Academy, contains experiments proving the efficiency of borax in preserving animal matters. Pieces of meat placed in a five per cent. solution of borax in August were withdrawn in a perfect state of preservation a month afterward. On exposure to the air, they dried without putrefying. The bodies of rabbits injected with a solution containing five per cent. of borax and ten per cent. of ammonium borate were perfectly preserved for months, the color and consistence of the tissues being unaltered. The author recommends borax as a preserving agent in taxidermy. It is proposed to render paper impermeable to water by a brief immersion in ammonio-cupric sulphate solution, and subsequent pressing and drying. By uniting several sheets while still wet by passing them between rollers, they form a hard, firm mass of great strength. The advantages of toilet soaps made by the cold process over those in which heat is used are fully recognized, and are due to the retention of the glycerine in the soap in the former process. But these cold soaps are objectionable because they contain an excess of caustic alkali. Mialhe proposes to make such soaps neutral by cutting them fine and exposing them to carbonic gas. A neutral, emollient soap is thus obtained of excellent quality. It is a common impression that coal exposed to the air immediately after mining loses essentially in valuable constituents, this loss having been stated as high as fifty per cent. of their combustible value. Kolb has tested the question by exposing four coals in this way for two months. In one of the coals the total loss was 4.8 per cent., but in the others it scarcely exceeded two per cent. of the combustible value. Exposed for a month to a stove heat of 90° C., one coal lost 5.5 per cent., another only 0.7 per cent. in value. A sample of coal mined at Nœux ten years previously was shown by analysis not to have deteriorated appreciably in value. White-lead made by the Dutch process has been found to have occasionally a red color, which has been attributed to the presence of foreign metals in the lead employed. Lorscheid, however, shows that this color is due to the presence of lead peroxide, and that it is produced when the carbonic gas is insufficient to convert the lead completely into carbonate. In proof of this he states that the red pigment submitted a second time to the action of the carbonic gas is converted into the white carbonate. Another common opinion in science, that animal or vegetable charcoal mixed with animal matters acted to facilitate their oxidation, has been rectified. Stanford has proved that lean beef mixed with an equal weight of wood, sea-weed, or bone charcoal, and freely exposed to the air for a period of twenty-one months, lost none of its nitrogen, and, moreover, that no nitrates were produced. The mixture was nearly inodorous, and he recommends it as a convenient one for utilizing animal offal as a fertilizer. In Le Blanc's process there is a loss of soda. This process, as is well known, consists in converting salt into sodium sulphate by sulphuric acid, and in heating this sodium

sulphate with limestone and coal to convert it into sodium carbonate. Scheurer-Kestner has shown that the loss in soda is due to the formation of insoluble sodium compounds which remain in the waste, and that this result depends on the excess of limestone which is employed. In the Bessemer steel process Kessler has proved by his analyses that the carbon of the cast iron does not burn until all the silicon has been removed. He also states that the combustion of the iron causes the percentage of the phosphorus in the metal continually to increase. Harcourt points out that carbon disulphide may be almost entirely removed from coal gas by passing it rapidly over red-hot iron, and this, too, without depositing any of its carbon or impairing its illuminating power. Indeed, in case the tube be heated to bright redness, an actual increase in illuminating power may be observed, owing to the production of more condensed hydrocarbons. Drinking-waters are generally filtered, if filtered at all, through carbon filters. Müller allowed some water to become stagnant, and then filtered it into a globe free from air through a carbon filter. In a few days the vegetable scum reappeared, though after boiling the water remained clear. It seems, therefore, that carbon filters can not remove vegetable germs from water, and that they are useful only to separate mechanical impurities, as sand, etc. Some experiments tried in Berlin prove that so small a quantity of coal gas as twenty-five cubic feet a day distributed in 144 square feet of soil four feet deep will kill all the trees in that area in a short time.

In *Botany* there has appeared a monograph of the *Ebenaceæ*, by W. P. Hiern, from the Transactions of the Cambridge Philosophical Society, England, giving in complete detail the relations and characteristics of the order, and including fossil as well as recent species. The five genera are represented by about 260 recent species, besides the forty reputed species which are extinct. The only known species of North America are a single *Maba* in Lower California, and our persimmons, *Diospyros texana* and *virginiana*, the latter very closely allied to *D. lotus* of Northern and Western Asia and *D. kaki* of Japan. Three fossil species are also reported from the miocene of Alaska and Nebraska.

A translation from the Danish into the German has been made by Grisebach and Reinke of the recent work by Oersted upon fungi, lichens, and algæ, the translators adding frequently to the original. It is well and largely illustrated, and gives in moderate compass, and in a quite popular though still scientific form, descriptions of the genera and of many of the more common species. A similar work in English would doubtless be appreciated.

An interesting contribution upon the relations of geography, climate, and vegetation has been made by Dr. F. C. Schübeler, Professor of Botany in the university at Christiania, in his *Vegetable Life in Norway* (*Die Pflanzenwelt Norwegens*), the introductory portion of which, with charts and illustrations, has just been issued. The physical characteristics of the region make his conclusions especially valuable.

Professor Müller, of Lippstadt, in a volume of no ordinary interest and value, upon the fertilization of the flower by insect agency, gives a compend of all the observations hitherto made within his knowledge upon the mutual adaptation of the structure of flowers and insects to secure the fertilization of the plant. He brings together the observations of Sprengel, Hildebrand, Darwin, Delpino, Axell, and others, and many made by the author himself, including not only the contrivances shown in the flower, but what has received much less attention, and has more of novelty, the special structural adaptations of insects for the same end—the whole illustrated with numerous well-executed drawings. The theories of Darwin as to the origin of species are fully adopted and enforced.

In our own journals Professor T. D. Biscoe gives in the *American Naturalist* for May a microscopic study of the winter state of the common duck-weed. The same journal contains descriptions of a score and more of new plants from the Arizona region, collected by the government expedition during the last season; and Professor D. C. Eaton describes in the Torrey Bulletin several new species of ferns.

In our last summary, under the head of *Geography*, we referred to the rescue of a portion of the crew of Captain Hall's steamer, the *Polaris*, by a vessel engaged in sealing on the coast of Labrador. Since then this party, nineteen in number, have reached Washington, the United States steamer *Frolic* having been dispatched to St. Johns by the Navy Department for that purpose. They arrived in good health, and have been subjected to a critical examination on the part of the Secretary of the Navy with a view of ascertaining as accurately as possible the events of the cruise. As the result, much important information has been gathered, tending to show that the steamer sailed as far north as 82° 16′, in what Captain Hall called Robeson Channel, and went into winter-quarters at the head of Polaris Bay, in what was called by him "Thank-God Harbor," in latitude 81° 38′, early in September. On the 8th of October Captain Hall started on a sledge journey to the northward, and returning on the 24th, after an absence of two weeks, he was almost immediately taken sick, and died on the 8th of November. The vessel remained in its winter-quarters until the 12th of August, 1872, when Captain Buddington started for home. On the 15th they encountered ice in latitude 80° 2′, and the vessel was fastened to a large floe by cables and ice-anchors, and drifted along with it as far south as Northumberland Island, in latitude 77° 35′, when, on the 15th of October, a heavy southwest gale came on. The impression that the vessel was in danger of being capsized or crushed caused her crew to throw overboard a large amount of provisions and supplies upon the ice; and while some of the men were engaged in removing these farther up on the floe, the *Polaris* broke away from her moorings in consequence of insecure fastening. For some reason the steamer could not, or at least did not, recover the portion of the crew thus cast away on the ice, and the floe drifted off with them. They thus remained, experiencing various adventures, from the 15th of October until the 30th of April, when they were picked up by the crew of the British steamer *Tigress* off the Labrador coast, as stated. When the result of the examination is published, we shall doubtless have occasion to recount some of the more interesting particulars.

Of the arctic expeditions for the present season, the only one recorded as under way is that of Mr. Leigh Smith to Spitzbergen. This gentleman started in Mr. Lamont's steam-yacht, the *Diana*, with the hope of reaching a high latitude, his own yacht also proceeding to Spitzbergen as a tender, or a relief vessel, if necessary.

All the government expeditions to the West are in the field, and are likely to do good service in the cause of science. The parties are those of Lieutenant Wheeler and Professor Hayden, already referred to; that of Major Powell, on the Colorado; that of Archibald Campbell, Esq., in the Northern Boundary Survey, with Dr. Coues as naturalist; and that of Mr. Dall, in the Aleutian Islands. In addition to these, another large expedition has started out for the protection of the constructors and surveyors of the Northern Pacific Railroad. This is accompanied by a number of scientific men, including Mr. J. A. Allen as naturalist; C. W. Bennett, assistant naturalist; Dr. L. R. Nettre as geologist and mineralogist; Mr. Konopicky, artist; and Mr. William Pywell as photographer. Much is hoped from this expedition, as it passes through a comparatively little known region of North America.

Commander Selfridge has returned from the Isthmus of Darien, bringing gratifying news in regard to the feasibility of an interoceanic ship-canal, the expense of its construction being now placed at a sum considerably less than the original estimate.

News has been received from Sir Samuel Baker, tending to prove his safety, in contradiction of the report of his death.

Dr. Nachtigal furnishes the results of an exploration to the northeast of Lake Tchad.

Mr. Smith, of the British Museum, who proceeded to Assyria, under the patronage of the London *Daily Telegraph*, to make ethnological explorations, has succeeded beyond his most sanguine expectations, and among other treasures has secured the portion of the deluge tablet which was missing from the one now in the Museum.

The *Challenger* has continued at work since our last, having carried a line of soundings and dredgings first from St. Thomas to Bermuda, then from Bermuda to Sandy Hook, thence to Halifax, and again from there to Bermuda. Her observations have, it is said, proved the entire practicability of laying a submarine cable between Bermuda and New York.

A French deep-sea expedition is now engaged in making explorations along the coast of the Mediterranean, and will be accompanied by M. Lacaze-Duthiers, an eminent French zoologist.

Under the head of *Ethnology* an interesting announcement is that of the discovery of stone implements and other prehistoric remains in Iceland, antedating certainly the period of its first discovery by Europeans. Among other facts brought to light by the voyage of the *Polaris* is the detection of the remains of at least sixteen Esquimaux huts on Newman's Bay, as far north as 81° 38′, right opposite the winter-quarters of the *Polaris*. In their vicinity were found spear-heads made of the teeth of the walrus, and other bone implements, but none of stone.

It is not within the province of the Record to chronicle the general progress of *Agriculture*; for this, reference must be made to the journals especially devoted to that subject. Among other points of general interest, however, we note the announcement of a method of greatly accelerating the ripening and of improving the quality of fruit, by removing a considerable portion of the superincumbent earth from over the roots of the tree to which this belongs. A German specialist maintains the failure of sewage irrigation as a matter of economy and of general expediency, the cost being much greater than the results will warrant, which in themselves are of very little moment.

We have from France the announcement of a new breed of ash-colored turkeys of remarkable excellence, far more prolific than the ordinary turkey, characterized, indeed, by a tendency to lay eggs throughout the year, like the domestic hen.

The record of *Pisciculture*, as might be expected, is very full. The States of Michigan, Pennsylvania, and Ohio have all passed more or less desirable laws regulating the subject of fisheries, and have appointed commissioners for their execution, as also to take measures for increasing the stock of useful food fishes within their limits.

The salmon eggs obtained at the hatching establishment of Mr. Atkins, of Bucksport, and distributed in part by the United States Commissioner, have all been hatched out with very little loss, and planted in a number of rivers and streams tributary to the Atlantic coast and the great lakes.

Shad planting has been conducted during the season by the United States Commissioner, under the general direction of Seth Green, in the Savannah River at Augusta, in the Neuse at Newbern, in the Roanoke at Weldon, the Potomac at Washington, and in the Susquehanna and Delaware; and numbers of young fish have been introduced into these waters respectively, as well as transported westward. The propriety of conducting such measures is well shown by the fact that young shad of two years old have recently been taken at the mouth of the Sacramento in California and near the mouth of the Genesee River in Lake Ontario—these being the results of experiments prosecuted by Seth Green in planting young shad in these localities in the spring of 1871.

Mr. Holton, a member of one of Seth Green's parties, succeeded in hatching out the eggs of the striped bass, or rock-fish, and, as a consequence, it is hoped that this species, one of the most valuable of those native to America, can be greatly multiplied in our rivers, and restored to those from which it has been for a long time absent.

The United States Signal-office has added to its other labors an inquiry which will be of great service to pisciculture—namely, that of determining the surface and bottom temperatures of the rivers and harbors of the United States. This will furnish the means, *a priori*, of determining whether it will be practicable to introduce particular species in a given locality.

Under the head of *Domestic Economy*, the most important announcement is that of the practicability and economy of the acetate of soda process of preserving meat and vegetables for a long time, as lately reported by Dr. Sacc, of Geneva. This substance, in his opinion, is

far superior to common salt, and will preserve the various objects in a condition much more akin to that of the fresh article.

An improved method of preparing glue from all kinds of refuse is also announced; while the startling intimation is given by a prominent chemist of the possibility of preparing alcohol from flint and quartz.

In the *Materia Medica*, trimethylamine, or propylamine, is presented and warmly indorsed as a remedy for acute articular rheumatism, the results of its application in numerous instances being quite extraordinary.

The use of large and continuous doses of chloral hydrate has also been strongly urged, as warranted by experiment, for a remedy in gout.

Our *Necrological* list for the month embraces some eminent names in science—the more prominent being those of Baron Justus von Liebig and Professor Christian Hansteen. To these are to be added Amédée Thierry, the historian; John Arrowsmith, the geographer; Dr. Henry Bence Jones, the physiologist and chemist; and the wives of Professor Lyell and Professor Owen.

RECENT DISCOVERIES IN ACOUSTICS.

In the March number of the *American Journal of Science* Dr. A. M. Mayer published his fourth paper of original investigations in acoustics. The first paper of this series describes simple and effective experiments with tuning-forks, showing that when a sounding body is *moved* the motion shortens the sonorous waves in those portions of the air toward which the sounding body moves, and lengthens the waves in those portions of the air from which it recedes.

This result, first indicated by Doppler in 1841, Professor Mayer makes evident as follows: If two forks are in unison, and one of them is sounded, while the other, placed at a distance, has touching one of its prongs a suspended ball of varnished cork, then the vibrations of the sounding fork will be communicated through the air to the other fork, and having been thus set in vibration it will project from its prong the suspended ball. Now if the prongs of the sounding fork are weighted its vibrations will be slower, and therefore the waves which it produces in the surrounding air are longer than they were in the first experiment, and not being *in time* with the vibrations of the other fork, the latter is not affected by them, and the cork ball remains at rest. But if we now move the weighted fork *toward* the other with the proper velocity, then these longer waves will be *shortened*, and will equal those given by the stationary fork, which now enters into vibration and projects the cork ball. The same results are obtained when a fork which gives too many vibrations, and therefore wave lengths, is moved away from the stationary fork.

These experiments are easily repeated, and can be shown to a large audience by projecting on a screen by means of a lantern the magnified images of the fork and its suspended ball. The experiments beautifully illustrate the well-known method of determining the motions of the heavenly bodies from an examination of the displacement of the fixed lines in their spectra.

In the second paper Professor Mayer gives his discovery of a method of detecting the phases of vibration in the air surrounding a sounding body, and thereby measuring *directly in the air* the lengths of its waves, and exploring *the form* of its wave surface. To detect the direction of the swinging particles of air, and to describe around a sounding body the form of its wave surface, at first seems beyond the reach of experiment, and it was first accomplished by the physicist in the following manner: An organ-pipe has a hole cut in its side; this hole is then covered with a delicate membrane; over this membrane is placed a small wooden cup. A gum tube leads into this cup a current of gas, which flows out by another tube, terminated by a small gas jet. When the organ-pipe sounds, this gas flame will jump up and down as the membrane closing the mouth of the cup vibrates outward and inward. If we now view this vibrating flame in a revolving mirror, it will appear as a band of light, with its upper border cut into teeth like those of a mill-saw, each tooth corresponding to an upward jump of the flame, and each space between two contiguous teeth corresponding to a downward jump of the flame. This method of observing the vibrations of air in an organ-pipe is due to König, of Paris.

If we then take a hollow sphere of brass of the proper size, with a circular opening in one side and with a small tubular opening in the opposite side (known as a Helmholtz resonator), and attach to the latter a gum tube leading to another membrane and box, whose gas jet is placed exactly below the jet of the organ-pipe, and hold the opening of this sphere near the pipe, we will see in the revolving mirror *two* series of serrations, with the teeth of one series exactly over the teeth of the other series. Now if we gradually move the sphere away from the pipe, we will see the serrations corresponding to the vibrating sphere of air gradually slide along those produced by the vibrating air in the organ-pipe, and when we have removed the sphere to such a distance that the serrations again appear exactly over each other, we will have moved the sphere from its first position by *the length of a sonorous wave* corresponding to the note given by the pipe. Furthermore, if when the sphere is placed at any distance from the pipe, so that the serrations of one flame are exactly over those of the other, we move the sphere around the pipe in all directions, so that in every position the serrations remain stationary, then we will have described in space *the wave surface of the vibrating air;* for from all parts of that surface described by the mouth of the sphere we have taken into the sphere the same phases of vibration. Professor Mayer thus found that the wave surface of an open organ-pipe was an ellipsoid, with its foci at the top and bottom of the pipe.

In his third paper Professor Mayer describes his method of measuring, with precision, the wave lengths of sound traversing tubes filled with air or any gas, and makes an important practical application of this method in an invention which he designates as an "Acoustic Pyrometer," which instrument consists of a coil of tubing formed of a material resisting very high heats, placed in the furnace whose temperature we would measure.

A sound is sent through this tube, and the length of the sonorous wave corresponding to this sound is measured by means of the vibrating flames. These waves will increase in length with the rise of temperature of the air in the tube,

and these wave lengths can be determined with such great precision that a temperature of even 2000° centigrade can be measured accurately to 10°.

The subject of the last paper of Professor Mayer's acoustical researches is "on the experimental determination of the relative intensities of sounds, and on the measurement of the powers of various substances to reflect and to transmit sonorous vibrations." The above measures are also made by means of König's vibrating flames. The following will convey a general idea of the method: Two of Helmholtz's resonators, vibrating to the note given by the two bodies, are placed near the bodies the relative intensities of whose sounds we would estimate. To each of these resonators is attached a gum tube; these tubes lead to a forked tube of metal, at the confluence of whose branches is placed one of König's membranes with its gas jet. One of these gum tubes has a piece cut out of it equal in length to a half wave of the note given by the two bodies, and this piece is replaced by an equal length of telescoping tube made of one tube of glass sliding inside of another. Both bodies are sounded. The vibrations proceeding from them impinge on the open mouths of the resonators, and the impulses of the vibrating air in these resonators are sent through the gum tubes to the membrane. Now by drawing out or pushing in the telescope tube, vibrations in opposite directions are caused to reach the membrane, and then, *if the intensities* of these vibrations are equal, the membrane must necessarily remain at rest, and the flame, viewed in the revolving mirror, will appear as a band of light with a smooth unruffled top border. The distances of the resonators from the sources of sound are now measured, and the ratio of the squares of the distances will give the relative intensities of the two sounds.

After Professor Mayer had succeeded in measuring the intensities of the vibrations of the air at certain distances from the sounding bodies, he measured the powers of various substances to transmit, absorb, and to reflect sonorous vibrations. To accomplish this he placed one of the sounding bodies in the focus of a parabolic reflector, and brought the two resonators at such distances from their sounding bodies that the intensities of the pulses traversing their respective tubes were equal. He then placed in front of, but not too near, the mouth of the resonator, in front of the reflector, the plane surface of the substance whose transmitting and reflecting powers he would determine. Serrations now appeared in the flame, because part of the force of the pulses which previously sounded the resonator are now reflected from the interposed substance. The resonator which has not the reflecting surface in front of it is now gradually drawn away from its sounding body, and at each successive point of remove the pulses propagated through the two resonator tubes are brought to opposition of phase on reaching the membrane by means of the glass telescoping tube. Equality of impulses having been obtained, we measure the distance of the resonator which has not the reflecting substance in front of it from the origin of its sounding body, and this measure, together with the known previous distance of this resonator, when equality was attained before the interposition of the reflecting surface, gives the data for the computation of the intensity of the *transmitted* vibration. This number subtracted from the measure of the intensity when the substance was not before the resonator, taken as unity, gives the reflecting power of the substance plus its absorbing power.

NOVEL RELATIONS AMONG THE PLANETS.

At the recent meeting of the National Academy of Science, at Washington, a most eloquent and elaborate essay was read by Professor Stephen Alexander, the astronomer, of Princeton, New Jersey. Some twenty years ago Professor Alexander communicated to the scientific world an original classification of the nebulæ, in which, among other things, but by a different process of reasoning, he anticipated the recent conclusion of Proctor that our Milky Way is a spiral nebula. Since then Professor Alexander has been busily engaged on the plans and the erection of the magnificent observatory at Princeton, which the college owes to the munificence and scientific interest of General Halsted. Notwithstanding the heavy duties imposed upon him as a teacher, however, Alexander, who is now the oldest of living American astronomers, has found time to engage in the laborious numerical computations incident to one of the most difficult problems that offer themselves to the consideration of astronomers, while at the same time it is by far the grandest. This is nothing less than the discovery of those laws which governed the original formation of the universe, and especially of our planetary system. To this investigation Kepler gave many years of patient toil, and though he honestly threw away as too artificial the many curious laws that he at one time thought he had discovered, yet there remained the so-called "Three Laws of Kepler" to challenge a Newton to find out their hidden meaning, and to reveal to him the truth of the law of gravitation. Next Bode found the famous relation between the radii of the planetary orbits, which contributed so much to the discovery of the planet Neptune, and of the group of asteroids between Mars and Jupiter. Since Bode's day Kirkwood and Chase have worked with some success upon the planetary harmonics; but, outstripping both in the exactness of his results, comes the veteran Alexander. It would be impossible here to give even a small portion of the innumerable remarkable coincidences and verifications that have been revealed to the professor —we say "revealed" advisedly, although it is evident that he has pursued a strictly logical, and in many cases a purely inductive, method— in the discovery of the wonderful ratios that he has shown to exist not only between the planetary motions, but also between those of the satellites.

Among the twenty-five classes of facts supporting his theories, perhaps the explanation of the tilting of the planes of the orbits of Uranus's satellites, and of the axis of revolution of Venus, may be considered most surprising. If we consider these new ratios and novel relations to be the direct results of the physical forces that were active in the original formation of the planetary system, then certainly the elaborate work of Alexander, in so far as it brings these ratios to our attention, must be considered as the most

valuable step that has yet been made toward the discovery of the underlying physical laws. We can indeed most fully sympathize with the eloquence with which he said: "I have not troubled you with the repetition of many, and perhaps foolish, things that the discoverer of these laws did and said, but when he saw this result" (alluding to the relations between Mercury and Venus) "there was a raising of the eyes to Heaven and a clasping of the hands together, while the lips uttered, 'Glory!'"

INFLUENCING THE ADVANCEMENT OF SCIENCE.

Professor De Candolle has lately published a work relating to the statistics of men of science, in which he takes into consideration those who have been not merely learned, but who have given a powerful impulse to the advancement of science, limiting his attention, however, to those whose labors have been in the line of mathematical, physical, and natural sciences. He takes for the basis of his inquiry the three great academies of Europe, namely, the Royal Society of London and the Academies of Science of Paris and Berlin, and makes a comparison between the number of scientific leaders developed in the several countries in connection with these institutions, and inquires into the causes which may have produced the differences which he narrates. The influences which he finds to be most powerful in advancing science, by increasing the number of those who prosecute it in a proper spirit, are, first, a well-organized system of instruction, independent of parties, tending to awaken research and to assist young persons devoting themselves to science; second, abundant and well-organized material means for scientific work—libraries, observatories, laboratories, collections, etc.; third, freedom of utterance and publication of any opinion on scientific subjects without grave inconvenience; fourth, the habitual use of one of the three principal languages, English, German, or French, and the extensive knowledge of these languages among the educated classes.

DISCORDANCE IN ARCTIC TEMPERATURES.

Mr. Dove has lately laid before the Berlin Academy the result of his investigations of the variability of the temperature of the regions bordering on the arctic zone. He states that as yet we have had opportunities for studying the question only through the observations of the arctic expeditions and through those made at the few fixed stations in Siberia, but the recent publication of longer series of observations made at stations in Greenland and in Iceland affords new and valuable material, with which he has combined all the temperature observations hitherto published by the Smithsonian Institution, and especially those made by Professor Cleaveland at Brunswick, Maine. Mr. Dove finds an astonishing discordance in abnormal seasons between Greenland and Iceland. For instance, the very cold year 1863 in Greenland had nothing analogous in Iceland; and so, inversely, the cold spring of 1866 in Iceland was accompanied by a warm spring in West Greenland. This strong contrast of the temperatures in two countries so near together seems to him to partly account for the very severe storms that have been generally reported from that region, and particularly those noted by Koldewey in his recent expedition.

Mr. Dove then seeks to find something similar in the contrasts of monthly temperatures in the northern portions of the United States, but the result is such that he concludes "that the arctic zone possesses a peculiar meteorological system." He also very distinctly asserts that we can only think of applying corrections to the monthly means of temperatures observed during north polar expeditions and other short periods, in order thus to obtain normal annual means, when we have primarily determined, at least approximately, the form of the isothermal lines for the epoch of the observations.

In connection with the preceding, Mr. Dove has made a study of the cold days of February, the so-called February minimum, for a number of European stations, and has shown that this, in Europe as in America, probably results from a cold polar current of air.

THE VARIABLE SIZE OF THE SUN.

Secchi, the astronomer of Rome, has concluded, from certain observations made during the past year, that he is justified in affirming that there is a periodic variability in the size of the sun. The many startling revelations of science during the past ten years have prepared the way for the acceptance of even this conclusion, though the observations on which Secchi founds his belief are as yet so few as to still leave room for some possible doubt on the subject. It would seem that the outer surface of the sun—the photosphere as seen by us—is a gaseous envelope in a state of continual and perhaps periodic change, such that the diameter of the solar orb, as measured by the aid of the telescope, is least in the region of the greatest spot activity—that is, the solar equatorial belt does not bulge out as does that of the earth, but, on the contrary, the solar polar axis is the longest diameter of that body. The excess of the polar over the equatorial diameter is, however, a very small quantity, and may be referred either to tides in the photosphere or to the influence of the solar spots themselves.

THE ORIGIN OF METEORS AND COMETS.

Proctor has recently advanced an idea as to the origin of comets and meteors that may seem to be but the revival of an old opinion, and one supposed to have been exploded. The researches of Schiaparelli and Newton and others, in that they showed the meteors to be regular members of the solar system, seem to have temporarily satisfied the inquiry as to the remote origin of these bodies. The former astronomer assumes them to exist generally throughout the interstellar spaces, and to be successively drawn to one and then to another sun, while Proctor reasons that these bodies are now found to travel in groups or streams, that it is difficult to conceive how our sun could draw a connected stream of meteors to itself at any given epoch, and that if these bodies were ejected from the self-luminous stars, we may with equal plausibility suppose similar bodies to have been ejected from the planets of our own system when they were in a molten condition. He accordingly shows the very moderate degree of force required to eject a meteor from the surfaces of the outer planets, and ex-

amines the orbits of such periodical comets and meteors as are at present known. In accordance with the suggestion of A. S. Herschel, he deduces the interesting conclusion that the comets expelled from Jupiter would mostly have a direct motion, or one in the same direction as his own, while those ejected from Neptune would be as likely to have a retrograde as a direct motion. Proctor concludes that many comets have sprung from Jupiter and Neptune, and at least one from Uranus—the latter being the well-known November meteor stream, or the Leonides, which Hind has shown to be connected with Tempel's comet.

ARTIFICIAL RESPIRATION IN ASPHYXIA AND IN SNAKE BITE.

According to Grehaut, carbonic acid which has entered the lungs from without may be eliminated again by means of artificial respiration without having been changed or undergone any combustion. In cases of apparent death from asphyxia caused by charcoal vapors the employment of artificial respiration has, it is said, resulted in finally restoring the patient to life. According to Dr. Fayrer, artificial respiration is the best method of counteracting the effect of snake bites, and in his opinion it is the only method that gives the slightest promise of enabling a patient to overcome the effect of the poison. A bitten rabbit has been kept alive for several hours by artificial respiration, whereas under the usual operation of the poison it would have survived but a few minutes.

MAYNARD ON THE MAMMALS OF FLORIDA.

A catalogue of the mammals of Florida, with notes on their habits, distribution, etc., by C. J. Maynard, has been published in the Bulletin of the Essex Institute of Salem. From this we learn that the panther and the wolf are still quite common in that State. The little striped skunk (*Mephitis bicolor*) is very abundant in certain sections, and was first detected by Mr. Maynard as occurring east of the Mississippi River. It is confined to the narrow strip of land between Indian River and Turnbull Swamp, as far north as New Smyrna, and as far south as Jupiter Inlet.

The manatee is mentioned as still occurring in large numbers about the inlets of Indian River, and also on the west coast, between Tampa Bay and Cape Sable. Several species of bats are also mentioned not hitherto found in this State. An interesting paragraph is given in regard to the domestic hog, which appears to have run wild, and to be very numerous. They are generally black, and furnish an interesting illustration, according to Professor Wyman, of the idea of natural selection, and the survival of the fittest. The light-colored hogs, according to his statement, contract a disease by eating a plant called the paint-root, which causes their hoofs to drop off, whereas the black ones are not affected by it. Mr. Maynard finds, however, that it is only the hogs with black hoofs that can safely eat the paint-root, the black hogs with white hoofs being made lame. The mere existence of a certain plant causes the hogs of a certain section to assume a dark color, since, if the hoofs are dark, the whole animal is usually so, and at the same time it is found that in some sections of the State, where this plant does not grow, white hogs are as plenty as the black.

In addition to this matter of natural selection, the settlers prefer hogs of a dark color, since they stand a better chance of escape from the bears by night, being much less conspicuous. Mr. Maynard finds, however, that a protective color is assumed by the hogs, and that those that have lived for generations in the piny woods are of a reddish hue, corresponding exactly with the color of the fallen pine leaves.

A NEW RELATION BETWEEN ELECTRICITY AND HEAT.

Dr. Guthrie, in a paper read before the Royal Society of London, gives the results of his study of a new and possibly important relation between electricity and heat. He finds that when an electrified insulated body is presented to a heated body (especially when the latter is in communication with the earth), the latter has the power of completely discharging the former of its electricity. The discharging power of a heated body diminishes with distance and increases with its temperature, and specially depends upon the heat rays of high intensity. The discharging power of a small white-hot platinum wire exceeds that of a large cannon-ball heated to the temperature of boiling water. This power does not depend upon the temperature of the electrified body. Negative electricity is always discharged more easily than positive, but the difference in this respect diminishes (with certain variations) as the temperature increases. Similar effects are obtained whether we use galvanic or static electricity. As hot iron discharges electricity most easily, so, on the other hand, a ball of white-hot iron refuses to be charged. As the white-hot ball cools it becomes first possible to charge it with negative, and subsequently, as it grows cooler, with positive electricity.

RAIN-FALL IN JERUSALEM.

Dr. James Chaplin, who is at present residing in Jerusalem, corrects a statement that the rain-fall there for 1863–64 amounted to but 8.84 inches, the actual quantity being something over 19 inches. The error arose from the use of an imperfect rain-gauge, and has been corrected from other observations.

In reference to the sirocco, he remarks that this is one of the most frequent evils, being especially prevalent in the month of May, and again in September, October, and November, just before the setting in of the rains. Its peculiarly depressing effect he considers to be due to the entire absence of ozone, the most careful observation both of dry paper and that which had been moistened failing to indicate any discoloration of the ozone paper.

UPPER COAL MEASURES WEST OF THE ALLEGHANIES.

In a recent paper on the "Upper Coal Measures west of the Alleghanies" (or the group of strata including the Pittsburg coal and the beds above it), Professor J. J. Stevenson holds that during their period the general condition was one of subsidence, interrupted by longer or shorter intervals of repose. During subsidence the great marsh, now appearing as the Pittsburg coal bed, crept up the shore; but in each of the longer intervals of repose it pushed out, seaward, upon the advancing land of the eastern shore of the

inland sea, and thus gave rise to the successive beds above it. The Appalachian coal-field and that of Indiana and Illinois were probably never united, and the bituminous trough of the former west of the Alleghanies did not owe its basin shape primarily to the action of forces concerned in producing the Alleghany Mountains.

SPONTANEOUS ELECTRIC CURRENTS.

The studies of Count du Moncel upon the electric currents found on telegraph lines will go far toward explaining the origin of the so-called "ground currents." He states that he finds strong currents on a line of wire having one end hanging free in the air, and that these vary with the moisture and the temperature. He has shown that they are not due to atmospheric electricity, because they never exist when the line is perfectly well insulated; and on such a line only a thunder-storm has any effect. Du Moncel considers the observed electricity to originate in couples formed by the suspended wire on the one hand, and the earth plate on the other, the earth itself and the telegraph poles forming the moist intermediate medium. He explains why the observed currents are, in fine, clear weather, positive during the day and negative during the night, but the reverse in rainy weather; and he elucidates the phenomena observed by Matteucci in a series of very careful experiments made on the plains of Lombardy.

RESULT OF SUPPRESSING EXCRETIONS OF THE SKIN.

Experiments have been tried by Socoloff as to the effect of suppressing the excretions of the skin, by shaving rabbits and painting the skin over with some material impervious to the passage of vapor. It was found that this always, sooner or later, produced fatal results, the animals a few hours before death exhibiting intermittent cramps and convulsions, while the temperature in the rectum fell to a considerable extent. Even wrapping the animal in cotton failed to produce any material increase of the temperature of the intestines or to delay death. The inhalation of oxygen was equally powerless in preserving life. Ulcers, arising from deep-seated extravasations, were found in the stomach. Albumen made its appearance in the urine shortly after the animal had been varnished. Whatever the substance used for coating the animal, whether simply a gelatine, gum, or regular varnish, inflammation of the kidneys was the result, sometimes accompanied by enlargement of the cell elements, and sometimes by their fatty degeneration.

ANALYSIS OF A FLASH OF LIGHTNING.

The duration and complex character of flashes of lightning form the subject of a very interesting and valuable contribution by Professor Rood, of Columbia College. To a certain extent his conclusions had been anticipated in a too little known work of Professor Henry on electricity, and also by other observers; but Professor Rood has, in other respects, penetrated further into the secrets of this phenomenon. By means of a rapidly revolving disk, Rood has shown that "the nature of the lightning discharge is more complicated than has generally been supposed. It is usually, if not always, multiple in character, and the duration of the isolated constituents varies very much, ranging from intervals of time shorter than one one-thousandth of a second up to others at least as great as one-twentieth of a second; and, what is singular, a variety of this kind may sometimes be found in the components of a single flash." The sparks from an ordinary electric machine or Leyden-jar are shown by Rood to be much shorter and far more nearly instantaneous, and he failed in several attempts to artificially reproduce the longer discharges of the lightning flash by passing sparks through watery vapor or spray. According to the analysis by Dr. Vögel of the spectrum of the lightning discharge, quoted by Professor Rood, some flashes give spectra of bright lines on a dark background, while others give bright lines on a less bright continuous spectrum as a background, and, finally, some give a continuous spectrum destitute of lines. Rood thinks it probable that the continuous spectrum corresponds to the prolonged constituents of the flash, and that the normal spectra of bright lines on a dark ground were produced by flashes more nearly instantaneous.

BECQUEREL'S ELECTRO-CAPILLARY PILE.

At a late meeting of the Paris Academy, Becquerel described a novel galvanic battery, or electro-capillary pile, as he terms it. The action of the porous diaphragms used in many galvanic batteries has been carefully studied by him since his invention thereof in 1829, and he states that in them, as in his new battery, the principle is the same—*i. e.*, the property possessed by liquids adhering to the surface of solids in capillary tubes or spaces of conducting electricity like a metal or solid conductor at the same time that the liquids are decomposed. It results from this that when two solutions of proper chemicals are in contact in a capillary tube, there is produced an electric current along its length in a direction the inverse of what would take place if the space were not capillary.

THE FRENCH ASTRONOMICAL COUNCIL.

Astronomical matters seem to be very systematically arranged in France, if we may judge from five decrees recently issued by the French government. According to these decrees, the government astronomers are divided into the three classes of "titular," "associate," and "assistant," the directors of the various observatories belonging, we presume, to the first of these classes, probably as the senior members of that rank. To each observatory will be assigned as many astronomers as the respective needs and resources demand. The directors and the titular astronomers are appointed by the President of the republic. To the Paris Observatory, as being the most important, is assigned the very handsome complement of twenty astronomers, including six titulars and ten associates, to whom must be added the director and various subordinates. This force is seen to be larger than that at any other existing observatory—as at Greenwich there are but eight, at Pultowa seven, and at Washington four astronomers.

As the new director of the reorganized observatory at Paris, Leverrier is reappointed to the position he formerly held. Marie Davy is director at Montsouris, and Stephan at Marseilles.

Editor's Historical Record.

POLITICAL.

OUR Record closes on the 24th of June.—The New York Legislature was adjourned on the 30th of May, after a session of 142 days. A new Local Option Prohibition bill, framed to obviate the objections made by the Governor to the former bill, was defeated in the Assembly, May 27, receiving only fifty votes. A Civil Damages bill (framed after the Ohio act), making liquor dealers and landlords responsible for damages committed by intoxicated persons, was passed by both Houses, and signed by the Governor. The bill in behalf of the Industrial Exhibition Company of New York city has been passed by the Legislature and signed by the Governor. It authorizes the issue by New York city of bonds to the extent of $2,500,000, to be secured by a first mortgage on the property of the company.

Some of the most important amendments reported by the New York Constitutional Commission have been rejected by the Legislature. The Commission limited special legislation by excluding laws regulating the internal affairs of towns and cities. This limitation the Legislature has abrogated. It also struck out the articles providing against hasty legislation and the introduction of bills of a private or local nature after sixty days from the beginning of a session. The new apportionment of Senatorial districts recommended by the Commission was rejected. The members did not, however, reject the amendment giving them a salary of $1500.

Among the important bills rejected by the last New York Legislature were the following: To exempt bonds and mortgages from taxation; to abolish the usury laws; to regulate the sale of gas, and to appoint inspectors; to provide for valuation of life-insurance policies; relative to forfeiture of life-insurance policies; to enable husband and wife to be a witness, either of them, for or against the other; for the protection of factory children; to regulate railway leases. The enumeration is a very suggestive one, since it includes some of the most popular and essentially important bills which were introduced during the session. But what was to be expected from a Legislature the Lower House of which on the last day of the session, while actually engaged in the passage of bills for the government of the State, could conduct itself after a fashion which would make the rudest of school-boys blush for shame?

The distribution of the $125,000 raised by the one-sixteenth of a mill tax for the benefit of sectarian institutions in the State of New York is very unequal. New York County pays one-half of the entire tax, but receives nothing in return; Albany County pays $3016, and receives only $103; Dutchess pays $2105, and receives nothing; Kings pays $12,196, and receives $4814; Westchester receives nothing, but pays $3748. More than three-fourths of the entire tax is a gratuitous contribution from a few counties for the benefit of all the others.

The Professional Thieves act recently passed by the New York Legislature has received judicial sanction, but is necessarily so interpreted as to be applicable only to such criminals as have been previously convicted of the crimes mentioned in the act. This latter provision is not included in the Pennsylvania statute of a similar import.

A few years since a commission was established in New York in imitation of the Massachusetts State Board of Charities. Until recently it has had simply an advisory power; but this board has been newly constituted, and its scope has been enlarged. Two acts of the last Legislature give this board extraordinary powers in reforming the poor-law administration of the State. One of these empowers the board to designate three or more persons in any county to act as "visitors" of the poor-houses and other public institutions. The other act empowers the secretary of the board to remove the insane paupers in the almshouses to the State asylums for the insane, and to reform the condition of the pauper children in the almshouses. Under the provisions of this act the pauper child may be transferred to an orphan asylum, or may be bound out during the remaining years of minority.

During the past two years the Prison Association of New York has organized a most practical method of dealing with convicts discharged or about to be released from the State and county prisons. The last annual report of the association shows that its officers have a good understanding with the State-prison inspectors and wardens, and that every convict has ample opportunity before release to confer with and be advised by the society's representative. By this means a large proportion of the younger convicts are provided with good employment, away from the cities, and with suitable employers, from the day of their discharge. The following facts relating to this subject have recently appeared in a memorandum issued by the Prison Association of New York:

"At each of the State-prisons, and at some of the penitentiaries, the association has established a definite system of personal effort to induce and prepare the convicts about to be liberated to enter upon a course of honest industry and prudent living; and to all such as will do so definite offers of employment and friendly protection, in suitable localities, are extended by the agents of this association. Upward of eighty convicts are liberated monthly from the three State-prisons, and of these *more than eighty per cent.* go directly to good employers, under direction of the association. Experience shows that the greater portion of these discharged prisoners try to do well. The penitentiaries discharge *upward of six hundred* prisoners monthly, and for many of them the association finds employment, and extends such aid and counsel as they need. In the sixty-seven county jails this system of duty has become in some measure established, and, by local agencies, each one is visited weekly.

"Upward of 300 employers of organized labor and trade industries are now aiding this effort for the benefit of discharged prisoners and for the repression of crime in all parts of the State. The known results of these efforts are remarkable. For example: at the Sing Sing prison these duties commenced on the 14th of August last, and from that date until May 1, a period of eight and a half months, out of the entire number (245) of prisoners discharged, *only three* have been resentenced to the prison; and at Auburn prison, out of 243 prisoners discharged during the nine months ending May 1, *only one* has been returned to the prison, and he was a man who persisted in his old habits of inebriety, and had not accepted the offer of employment. At Clinton prison *only one* of the discharged prisoners of the same nine months' period was returned to the prison during that time."

The Illinois farmers have succeeded in elect-

ing their candidate, Mr. A. M. Craig, as judge of the Supreme Court, by a majority of between 2000 and 3000. This election has been denounced in some quarters as if it in some way impaired the sanctity of the judiciary in that State. But where an office is to be filled by popular election, it is certainly as fair that popular as that partisan interests should enter into and determine the result. It seems now probable that the Western farmers will even go so far as to consider their own interests in the elections hereafter to be held to fill State and Federal offices. Possibly they may attempt to consecrate the ballot-box entirely and without reserve to popular interests, and realize for the first time on this planet a democratic form of government.

A meeting of gentlemen representing various commercial interests was held in New York city June 18, having for its object the alliance of business men with the American Cheap Transportation Association, organized by the Producers' Convention at the Astor House in May. In a statement entitled "Commercial Interests of New York as related to our System of Transportation," the promoters of the organization favor freight roads to the West, built and owned (but not operated) by the government, and advise that merchants should combine in the same manner as has always been done by the transportation companies.

Governor Straw, of New Hampshire, inaugurated June 5, in his message to the State Legislature recommended a local option law as the best method of restraining intemperance.

The State Republican Convention of Maine, at Bangor, June 19, nominated Nelson Dingley, Jun., for Governor.

Susan B. Anthony was tried June 17 at Canandaigua, New York, for voting last November. The case came before the United States Circuit Court, and was decided against the defendant, who was fined $100 and costs. The inspectors who registered Miss Anthony's name and received her vote were also convicted, and fined $25 each and costs.

Prince Edward Island has been annexed to the new Dominion of Canada. Newfoundland alone of the British Provinces now remains out of the union.

The new French government, May 26, was constituted as follows: *Minister of Foreign Affairs*, Duc de Broglie; of *Justice*, M. Ernoul; of the *Interior*, M. Beulé; of *Finance*, M. Pierre Magne; of *War*, General Du Barail; of *Marine*, Admiral Dompierre d'Hornoy; of *Public Instruction and Worship*, M. Batbie; of *Public Works*, M. Deseilligny; of *Agriculture and Commerce*, M. De Labouillerie. The Bonapartists have a majority in the ministry.

The French Assembly, June 10, by a vote of 389 to 315, sustained the action of M. Beulé, Minister of the Interior, in his policy for the subsidizing of the provincial press. On the 15th M. Beulé was succeeded by M. Goulard.

The Spanish Constituent Cortes assembled May 31. Señor Orense was chosen President of that body. On the 7th of June President Figueras announced to the Cortes his determination to give back to Parliament the powers with which he had been invested as President of the provisional republic. He moved a project for the proclamation of a federal republic. Señor Pi y Margall was chosen, by a vote of 142 to 50, to form a new cabinet. On the 8th the resolution proclaiming the federal republic was passed, 210 to 2. Señor Pi y Margall presented the following constitution of the government: *President of the Council and Minister of the Interior*, Señor Pi y Margall; *Minister of State*, Señor Cervera; of *Justice*, Señor J. Predical; of *War*, Señor Estavanez; of *Colonies*, Señor Sorni; of *Finance*, Señor Carvajal; of *Marine*, Señor Oreiro; of *Public Works*, Señor Palanca. This was not approved. Subsequently Señor Figueras was appointed to form a cabinet. He reported his inability to do this, and was requested to carry on the government with his former ministry. On the 12th the resignation of this cabinet was accepted, and Pi y Margall's cabinet reconstituted, retaining its head and the ministers of War and the Colonies, but constituting Señor Muzo, *Minister of Foreign Affairs;* Señor Aurich, *Minister of Marine;* Señor Ladus, *Minister of Finance;* Señor Benot, *Minister of Public Works;* and Señor Gonzalez, *Minister of Justice*. On the 13th the ministerial statement of policy was made, involving the speedy demarkation of the federal states, the liberty of the Antilles, and the suppression of slavery.

The Italian Chamber of Deputies, May 27, finally passed the bill abolishing religious corporations. In our last Record we indicated the provisions of the bill. It passed the Senate, June 17, by a vote of 58 to 20.

The Emperor of Brazil recommends minority representation.

The Turkish Sultan has granted a firman to the Viceroy of Egypt conceding to the latter an independent government, and power to augment the army and to conclude treaties with foreign governments.

The Sultan of Zanzibar has signed the treaty with Great Britain for the suppression of the slave-trade.

A telegram from St. Petersburg of June 18 reports the junction of two of the columns advancing on Khiva, May 26, before Khojaili, and a victory over the Khivans, who made a stand at that position. The Khivans were pursued to the fortress of Mangit, when they were again defeated, June 1, and the fortress captured.

MISCELLANEOUS.

Captain Jack, the Modoc chief, after having been deserted by nearly all his warriors, who were either killed or captured, was taken by Colonel D. Perry's cavalry squadron June 1. Those of the Modoc captives who were engaged in the assassination of General Canby are to be tried by court-martial.

The lease of the New York and Harlem to the New York Central and Hudson River Railroad Company for 401 years was effected May 26.

Major George Forsyth, of General Sheridan's command, returned toward the last of May from his trip up the Yellow Stone. He reported the navigability of that stream from its mouth to Powder River. The Yellow Stone is full of small islands, and is well wooded along the banks. The valley is from two to twelve miles wide, and much of the soil is susceptible of cultivation.

The quantity of beer consumed in the United States is twenty-five quarts per head per annum.

while in Northern Germany the consumption is only twenty-one quarts.

An estimate has been made from the census of 1870, concerning fifty cities in the United States, in the order of their rank by population, showing the number of families in each, the number of dwellings, and the number of persons to each dwelling. The following table is the result:

City.	Rank.	Families.	Dwellings.	Persons to a Dwelling.
New York	1	185,789	64,944	14.72
Philadelphia	2	127,746	112,366	6.01
Brooklyn	3	80,066	45,834	8.64
St. Louis	4	59,431	39,675	7.84
Chicago	5	59,497	48,620	6.70
Baltimore	6	49,929	40,350	6.63
Boston	7	48,188	29,623	8.46
Cincinnati	8	42,037	24,550	8.81
New Orleans	9	39,139	33,656	5.69
San Francisco	10	30,553	25,905	5.77
Buffalo	11	22,325	18,205	6.44
Washington	12	21,343	19,545	5.59
Newark	13	21,631	14,350	7.38
Louisville	14	19,177	14,670	6.87
Cleveland	15	18,411	16,693	5.56
Pittsburg	16	16,182	14,224	6.05
Jersey City	17	15,687	9,867	8.37
Detroit	18	15,636	14,658	5.42
Milwaukee	19	14,226	13,048	5.48
Albany	20	14,105	8,748	7.94
Providence	21	14,775	9,227	7.46
Rochester	22	12,213	14,649	5.36
Alleghany	23	10,147	8,347	6.37
Richmond	24	9,796	8,033	6.35
New Haven	25	10,482	8,100	6.28
Charleston	26	9,098	6,861	7.14
Indianapolis	27	9,200	7,820	6.17
Troy	28	9,362	5,893	7.88
Syracuse	29	8,677	7,088	6.07
Worcester	30	8,658	4,922	8.35
Lowell	31	7,649	6,362	6.43
Memphis	32	7,824	6,408	6.28
Cambridge	33	7,897	6,348	6.24
Hartford	34	7,427	6,688	5.56
Scranton	35	6,643	5,646	6.31
Reading	36	6,932	6,294	5.39
Paterson	37	7,648	4,603	7.22
Kansas City, Mo.	38	5,585	5,424	5.95
Mobile	39	6,304	5,734	5.58
Toledo	40	6,457	6,096	5.20
Portland, Maine	41	6,632	4,836	6.50
Columbus, Ohio	42	5,790	5,001	6.24
Wilmington, Del.	43	5,808	5,398	5.71
Dayton	44	6,109	5,601	5.43
Lawrence, Mass.	45	5,287	3,443	8.40
Utica	46	5,793	4,799	6.00
Charlestown, M.	47	6,055	4,396	6.44
Savannah	48	5,013	4,561	6.19
Lynn	49	6,100	4,625	6.10
Fall River	50	5,216	2,687	9.96

It will be seen that Philadelphia, though having a much smaller population than New York, has nearly twice as many dwelling-houses. As shown by other tables, Philadelphia averages almost a house to a family; New York averages 5.07 persons to a family, 14.72 persons to a dwelling; Philadelphia 5.28 persons to a family, and 6.01 persons to a dwelling. The reasons for this difference are well understood. New York is crowded with large residences, and Philadelphia has miles in three directions to expand within her city limits. Land being cheap, buildings are small and rents within a mechanic's reach. Brooklyn has about an even race with Chicago in the number of dwellings, but Brooklyn residences average greater value and much larger size. It is somewhat strange that the cities of Brooklyn and Chicago should each be ahead of St. Louis in the number of dwellings. Land is very much cheaper in St. Louis than in Brooklyn. These figures were taken before the Chicago fire, but Chicago has more dwellings now than she had then, and the comparison still holds good.

From this table it would appear that the crowded cities are New York, Fall River, Cincinnati, Brooklyn, Boston, Lawrence, Jersey City, and Worcester. In a table giving the number of dwellings in States, New York is accredited with the largest number, 688,559; Pennsylvania, 635,680; while no other State has half a million. The average number of people to a dwelling is, New York, 6.37; Pennsylvania, 5.54.

The Court of Appeals, June 10, decided to grant Edward S. Stokes a third trial for the murder of James Fisk, Jun.

A French steamer arrived at Havana, June 17, with 500 Chinamen on board. During the passage there were 175 deaths.

The Persian Shah is making a rapid tour. He arrived at Berlin May 31. He was in London June 18.

It is believed that the Russian imperial government assents to the proposition of Ferdinand de Lesseps for the construction of a complete line of railway communication running across Central Asia from St. Petersburg, and connecting with the English railways in India, to Calcutta.

The tenant-farmers of England have organized an association to defeat the Agricultural Laborers' Union. The members of the association refuse to employ Union men, and by the last of May there were 2000 laborers "locked out" in this manner. The Union was suffering from a lack of funds.

According to the London *Daily Telegraph* the statistics of the Roman Catholic Church in England show an archbishop and twelve bishops; thirteen cathedral chapters, consisting each of a provost and ten canons; thirteen dioceses, with 1621 clergy and 1016 public churches and chapels; six greater colleges, ten lesser colleges, 200 schools for the middle class and the poor in London, and 800 in the rest of England; ten convents for the contemplative life. The number of Catholics in England and Wales is set down at about 1,500,000, and in Scotland at between 400,000 and 500,000. In Ireland the hierarchy consists of four archbishops—two of them primates—and twenty-four bishops. There are twenty-eight dioceses, with 1080 parishes and 3440 priests; 2349 public churches and chapels, one university, twenty-five colleges, and about 7000 primary schools. According to the census of 1871, there were 4,141,933 Catholics in that country.

DISASTERS.

May 30.—Boston suffered from a second destructive conflagration. The destruction of property is estimated at $1,291,000; insurance, $763,000. Among the buildings destroyed were the Globe Theatre, Chickering's buildings, the International Hotel, and the Boston Library. The fire covered four acres, bounded by Hayward Place, Bumstead Place, the eastern side of Essex and Boylston streets to Head Place, and thence by a line diagonally to Hayward Place. Five men were killed and one injured.

June 10.—Fire-damp explosion in the Henry Clay Colliery of Shamokin, Pennsylvania. There were thirty-five men in the mine. Ten of these were taken out dead.

May 28.—Boiler explosion at Brussels, Belgium. Fourteen lives lost.

May 31.—Explosion in a colliery near Wigan, England. Six lives lost.

June 9.—Alexandra Palace, at Muswell Hill, a northern suburb of London, was destroyed by fire. It was a place of popular resort, like the Crystal Palace, only not so large, and contained a fine collection of pictures and statuary. It was first opened May 24. Loss, $3,000,000.

OBITUARY.

June 5.—In New York, Mansfield Tracy Walworth, author, aged forty-three years. Shot by his son.

June 16.—At Roselle, New Jersey, the Rev. Isaac Ferris, D.D., late Chancellor Emeritus of the University of New York, aged seventy-five years.

June 18.—In New York city, Horace F. Clark, aged fifty-eight years.

June 19.—In New York city, John A. Kennedy, ex-Superintendent of Police, aged seventy years.

June 21.—In Brooklyn, Lewis Tappan, the veteran abolitionist, aged eighty-five years.

June 1.—At Halifax, Nova Scotia, the Hon. Joseph Howe, the newly appointed Lieutenant-Governor of that province.

June 5.—At Frosinone, Italy, Urbano Ratazzi, the Italian statesman, aged sixty-five years.

June 6.—At Carlsbad, in Bohemia, William Adalbert, Prince of Prussia, aged sixty-two years. He married (morganatically) the sister of Fanny Ellsler, the danseuse.

June 14.—At Berlin, Frederick Louis George von Raumer, the historian, aged ninety-two years.

Editor's Drawer.

THE part performed by our colored brother during the rebellion was a peculiar one, and in that, as in almost every thing in which he is a participant, the comic side of his character will display itself. In the winter of '63, Colonel T. W. Higginson, whose *Army Life in a Black Regiment* is one of the most interesting works brought out by the war, was steaming up the St. Mary's River, Florida, and overheard the following remarks made to a little knot of sable brothers by Corporal Adams Allston, one of the most gifted prophets of those parts, whose influence over the men was unbounded:

"When I heard," he said, "de bomb-shell a-screamin' troo de woods like de judgment-day, I said to myself, 'If my head was took off to-night, dey couldn't put my soul in de torments, perceps [except] God was my enemy!' And when de rifle-bullets came whizzin' across de deck, I cried aloud, '*God help my congregation! Boys, load and fire!*'"

THE freedman, by-the-way, is never more in his element at the South than when attending camp-meeting. They have a peculiar intonation when they hold forth, which is enhanced by the addition of the syllable "er" to the end of almost every word. A story is told of an old colored minister who, in expatiating upon the horrors of everlasting condemnation, which those near the close of their terrestrial journey must expect, pointed to his own aged father, exclaiming,

"Look at that ole man-er, with one foot in the grave-er, and the other all but-er!"

THE courtesy of the "gentlemanly conductor" on American railways, especially to women traveling without male escort, has a fresh and pleasing illustration in the following, from a lady:

The conductor, who had taken me as a stranger under his special protection, was quite astonished to see that I did not, like my fellow-travelers, devour all the food set before me during the "ten minutes for refreshment" that was allowed to appease our hunger at the station where we were to "dine." He expressed his feelings in the following characteristic manner:

"Well, ma'am, I declare *you don't eat enough to keep a single-action cockroach going!* I kinder thought you were hungry when you asked for the refreshment-room;" then, pointing to the untasted dishes, "I guess you could manage to worry that down, *with a drink*, ma'am!"

Americans, as a general thing, do prefer their "game" in a separate course; hence the "single-action" dish was probably declined.

APROPOS of the tornado that recently swept over Keokuk and Washington counties, Iowa, by which so many lives were lost and so much property destroyed, we observe that one journal has in a single sentence summed up its terrific force: "It was a wind that just sat up on its hind-legs and howled!"

IN a certain town in Vermont several instances have lately occurred where husbands who have lost their wives have married again within six to twelve weeks; hence a good deal of neighborhood gossip, particularly among some of those women who "still live." One of these, Mrs. B——, at a quilting the other day, said, "I do hope I may be spared till summer, for then I may have tombstones over my grave *before my man gets tied up again!*"

THE latest addition to our advertising vocabulary comes from Philadelphia, informing us that an actor in that city will on a certain evening "tragediate."

THIS comes from a lady of high degree in England, who lately made a little run through America—she did it in a couple of months—stopping long enough in New York to see something of the way in which educated people get on hereabouts, and to enjoy a few dinners at which Bret Harte, John Hay, and other poets and such, assisted. She writes of barbers: "I have been told, 'by those who know,' that the occu-

pation of barber in the United States has been brought to the perfection of a science; that is probably why our cousins complain so bitterly of the tortures they have to endure at the hands of even the best Parisian *coiffeur*, and also why it strikes you that the meanest laborer looks so cleanly and neat for his calling. A Neapolitan gentleman once remarked to me, with the most enthusiastic rapture, on the performance of a certain colored barber, to whose mercies he abandoned himself every morning, 'Ah!' said he, 'it is just like the exquisite touch of a young girl's hand!'"

Possibly this barber may have been that artist whose pole points heavenward in Albany, and over whose door reads the following sign, "TONSORIAL OPERATOR AND CAPILLARY REGENERATOR."

AN officer of our army, stationed at Fort Laramie, Wyoming Territory, writes as follows: "Being on my return from the East, at North Platte, three hundred miles west of Omaha, I was conversing with some friends in the reception-room of the railroad hotel, when a gentleman entered the room, and addressing one of the matrons of the party, said, "Mrs. ——, I hev composed a song ballid, and would like your daughter to larn it by harte, and sing it on the pyanner." The "song ballid" is as follows, t'wit:

THE LOST CHILDE SONG BALLID.

Come men and madens fare and near
Come Listen to my song
I will in Shore it is all write
there is nary word thats Rong
of an axdent that was taken Place
in the neighbor hood A Round
A Little Childe Bout 2 years old
was Lost But now its found.

It Started to a neigh bours house
So as I had Been tolde
twas in the fall-time of the year
and the Wether verry cold
its Parents they ware So Distressd
Concerning of ther Childe
Saying shorely if it isnt Ded
it Certains going wilde

the Peopple Gethered from fare & near
A hunting Evry way
there was no more Seede of the Little Childe
Un till the 7venth Day
one eavning tha Re turnd at Late
Just a Bout the clothes of Day
from hunting of the Little Childe
A Looking Evry Way

They saw the Buzzards flying Up
as they ware Looking Down
and ther the Little iufant Lay
A victum on the Ground
ther was no one ther to Close its Eyes
nor Boinde its Little head
twas in A Bunch of Baren Grass
it made its Dying Bed

o Lord you know wher the infant Lay
and toock its Breath a way
I make no Dout But it will Shout
in one Eternal Day
its Bid Sin and Sorrow all a Due
and that we all Doe Know
its Pade the Debt it had to Pay
the Justly Debt it owd.

THE END.

A FEW miles from this city, in the town of New Rochelle, Westchester County, stands the monument of Thomas Paine, where it may be seen from the road as the traveler passes by. It stands on land that was formerly a part of the Devoe estate. It is not generally remembered that the State of Pennsylvania gave him $3000, and that the State of New York bought and presented to him the farm of three hundred acres above alluded to for services rendered by him to the general government. And these two instances are believed to be the only two in the history of the country where money and land were given to an individual for the efforts of his pen. In the latter part of his life Paine became very intemperate. In 1809 he died. In 1819 William Cobbett violated the grave, and took his bones to England.

By a late steamer from England we learn that the following epigram, written by Peter Pindar on a blank leaf of Paine's *Age of Reason*, is now first published:

Tommy Paine wrote this book to prove that the Bible
Was an old woman's dream of fancies most idle;
That Solomon's proverbs were made by low livers;
That prophets were fellows who sang semiquavers;
That religion and miracles all were a jest,
And the *Devil in Torment* a tale of the priest.
Though Beelzebub's absence from hell I'll maintain,
Yet we all must allow that the *Devil's in Paine.*

IN the very interesting biography of Robert Chambers, the author-publisher of Edinburgh, mention is made of a visit paid to him by the Rev. Sydney Smith. "My reverend and facetious visitor," says Chambers, "made some little inquiry about my own early efforts, and laughed when I reminded him of a saying of his own about studying on a little oatmeal, for that would have applied literally to my brother and myself.

"'Ah, *labora, labora*,' he said, sententiously; 'how that word expresses the character of your country!'

"'Well, we do sometimes work pretty hard,' I observed; 'but, for all that, we can relish a pleasantry as much as our neighbors. You must have seen that the Scotch have a considerable fund of humor.'

"'Oh, by all means!' replied my visitor. 'You are an immensely funny people; but you need a little operating upon to let the fun out. I know no instrument so effectual for the purpose as a *corkscrew*.'"

THE city of B——, a town on the Big Muddy, in Missouri, has among its principal citizens Captain M'V——, a man who "knows how to keep a hotel," and who says sharp things on current events. Just before the breaking out of the late "unpleasantness" a young lady of B—— was married to a rising physician. He joined his fortunes with the Confederates, and soon after was killed in battle. Afterward the lady married a merchant of St. Louis, who was carried off by the cholera in 1866. Returning to her former home, she met a young man of fine address and entertaining manners, but who had a greater social than business reputation. He was not rich, and had, apparently, little prospect of becoming so. Under these circumstances the engagement of the twain was looked upon as any thing but desirable by the friends of the lady, who, notwithstanding her double widowhood, was still young and attractive. But in this case, as in innumerable others, love triumphed over prospective poverty. One evening while Captain M'V—— and some of his guests were sitting on the porch, enjoying the cool breeze of the Big Muddy, the couple above referred to strolled by.

After they had passed, the captain exclaimed, "What terrible sin can that woman have committed that she should be thus visited by all the curses in the calendar? She has had *war*, she has had *pestilence*, and now she is threatened with *famine!*" He might have gone on and added, "battle, murder, and sudden death." Fortunately the last marriage has proved as "happy as they make them."

THE simplicity of legal proceedings is one of the felicitous peculiarities of Washington Territory, though the law, so far as divorce is concerned, is not quite so limber as it is in Indiana. We have from the Territory of Washington a letter from a young man who seems to have suffered a little from the pangs of matrimony, and wishes to obtain a "deviorce." For that purpose he puts himself on paper to a justice of the peace of that region, supposing him to have the requisite dissolving power; and his way of doing it is so simple and candid as to command our admiration. Thus:

April 11, 1873.

Justice Snyder:

DEAR SIR,—I believe one year ago last September you married me to a girl by the name of either Mrs. Rosa Kayser or Miss Rosa Heis. She left me about three months ago. now I wish to get a Deviorce. how will I come about it? I wish for you to inform me and what way I shal pay you for your trouble. pleas answer right off and you will oblige

NEWTON SWINEFORD.

Poste Scrapt.—If you can't do what I want can't you send me some other girl that will do better for me and wont leave me. *That will do.* N. S.

A HUMOROUS instance of the coolness of the freedman under fire—perhaps a better one than the average—occurred in Colonel Higginson's regiment during a little fight in Florida. "My soldiers," he says, "in turn fired rapidly—too rapidly, being yet beginners—and it was evident that, dim as it was, both sides had opportunity to do some execution. I could hardly tell whether the fight had lasted ten minutes or an hour, when, as the enemy's fire had evidently ceased or slackened, I gave the order to cease firing. But it was very difficult at first to make them desist: the taste of gunpowder was too intoxicating. One of them was heard to mutter, indignantly, "Why de cunnel order *cease firin'*, when de secesh blazin' away *at de rate ob ten dollars a day?*"

THE youngsters—we don't mean the very little ones—will appreciate the probable accuracy of the following incident, sent to us by a lady in Gallipolis, Ohio: "Not long ago our Charlie was one of the pall-bearers at a little boy's funeral, and felt the importance of the position. Child-like, however, he could not realize the sadness of the occasion as he started at the appointed hour. When he came home he said, 'I and the other three boys rode home on the hearse. Will and I sat with the driver, Harry and Dick got on behind, and *we just come down a-sailing!*"

To impart an idea of eternity is certainly one of the most difficult of tasks, yet the effort was made recently by a preacher, who exclaimed, "Eternity! why, don't you know the meaning of that word? Nor I either, hardly. It is for ever and ever and five or six everlastings atop of that. You might place a row of figures from here to sunset, and cipher them all up, and it wouldn't begin to tell how many ages long eternity is. Why, my friends, after millions and billions of years had rolled away in eternity it would be a hundred thousand years to breakfast-time."

THE little ones are often homilists of the pithiest and directest sort. From Pontiac, Michigan, we have a notelet which tells of a little girl who, after a day which had been peculiarly trying to her mother, went to her room, and before going to bed knelt down, as was her wont, to say the nightly prayer. The first sentence, slightly altered from the usual form, was this: "I pray God to bless papa and mamma, and make them a comfort to each other; but I don't think He can, *mamma is so cross to papa.*" There is much doubt abroad about many "pops" as well as mammas; noticed, too, by elders as well as by babes.

To those who thirty years ago were familiar with the leading officials of the Post-office Department at Washington, it may be pleasant to read the following, written by a gentleman, then one of the most popular and efficient officers of the department, and who still survives, in good health, to enjoy

"That which should accompany old age—
Honor, love, obedience, troops of friends:"

POETRY SUBLIME!

I sing of what we have and what we've not,
In this our bright and ever-favored spot;
And to begin (I'm not a "ring-tail roarer!"):
If we've no bores, who'll say we've not a *Bohrer?*
Now some may think that I am but a dolt
To say if we've no horses, we've a *Colt.**
But what care I? I'm guided by the "gunter:"
If we've no hounds, all know we have a *Hunter;*
And some may deem it not a little droll
That, though we have no mill, we still take *Toole;*
And yet more queer (allow me to repeat)
That we've no flour, though blest with first-rate *Wheat.**
So, if we've hickory none, we have good *Beach;**
If "suckers" none, a sound and well-tried *Leech;**
And what is more (this none will take in dudgeon),
If we've no perch, we have a prime live *Sturgeon.**
Nor would we pause, or in our duty falter;
We are not led, though you may see our *Halter.*
We love our country, as we've daily shown her;
And if not slaves, we surely have an *Owner.*
What's our religion? Let our *actions* tell:
Though we've no church, who has not heard our *Bell?*
Here let me stop, though "much remains unsung;"
If we're not old, alas! we're not all *Young.**
So now good-by! excuse this trifling thing:
The humblest of us is himself a *King.*

POST-OFFICE DEPARTMENT, *April* 8, 1848.

IT was in Harrodsburg, Kentucky, the other day, that a colored woman, gorgeous in yellow calico and a flowered Dolly Varden, and evidently not familiar with the town, came down the street, inquiring at every store if that was the place where they kept letters for the people, until finally, arriving at her destination, the following dialogue occurred:

WOMAN. "Has Sary Lewis sent any thing here for me from Lexington?"

P. M. "For whom?"

WOMAN. "Me."

P. M. "But what name?"

WOMAN. "Well, my name's Nancy Scott. They sometimes calls me Lucy Williams; but

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* Dead.

since I got married last month I've changed my name to Harriet Gray."

Notwithstanding this explicit reply to his interrogatory, Mr. Mailbags was unable to ferret out the desiderated screed from "Sary Lewis."

In Lord Houghton's newly published volume of *Monographs* there appears a new and characteristic anecdote of Sydney Smith and a little clerical fun in Yorkshire: "He willingly assisted his neighbors in their clerical duties, and an anecdote of one of these occasions is still current in the district. He dined with the incumbent on the preceding Saturday, and the evening passed in great hilarity, the squire, by name Kershaw, being conspicuous for his loud enjoyment of the stranger's jokes. 'I am very glad that I have amused you,' said Mr. Sydney Smith at parting; 'but you must not laugh at my sermon to-morrow.' 'I should hope I know the difference between being here or at church,' remarked the gentleman, with some sharpness. 'I am not so sure of that,' replied the visitor. 'I'll bet you a guinea on it,' said the squire. 'Take you,' replied the divine. The preacher ascended the steps of the pulpit apparently suffering from a severe cold, with his handkerchief to his face, and at once *sneezed* out the name 'Ker-shaw' several times in various intonations. This ingenious assumption of the readiness with which a man would recognize his own name in sounds imperceptible to the ears of others proved accurate. The poor gentleman burst into a guffaw, to the scandal of the congregation; and the minister, after looking at him with stern reproach, proceeded with his discourse, and won the bet."

From a book a million of years old, more or less, we quote the following homily, not more for the good sense pervading it than for the quaintness of its style and orthography. We believe it is its "first appearance" in America:

To lyve at home in housewyverye,
To order well my famylye,
To see they lyve not idillye,
To bryng upe Children vertuoslye,
To relyeve poure foulkes willinglye,
This ys my care with modestye,
To leade my Lyfe in honestye.
Then serve we God duely i engage,
Not willing our owne Wil, but just willing hys;
Obeying our Howsbands in what lawful ys.
Who housewivelye taketh daily joy in thys,
Well may be called good Matron or Maistris.

The style of persuasion that obtains in the outlying settlements of our beloved country may be inferred from the following scene that occurred recently at the Union Railway ticket-office at Denver. A rough-looking man purchased through mistake a ticket for New York *via* the Kansas Pacific line when he wanted to go over the Union Pacific. He did not discover the mistake until after the ticket had been paid for, and on asking the agent to change it the latter refused to do so.

"You won't change this ticket, then, won't you?"

"No," replied the agent; "you have your ticket, and I have the money for it, and if you want a ticket over the other route you will have to buy it."

Very quietly the stranger twisted his ticket into a small roll, very serenely drew from under his coat tail a six-shooter, coolly stuck the twisted ticket into the muzzle thereof, and sticking the pleasant-looking thing through the little square window of the ticket-office almost in the agent's face, and speaking in a tone that left no doubt of his determination, said, "Stranger, thar's that ticket; take it yourself and change it, or by the great horn spoon I'll blow it clean through you." It was changed with cheerful alacrity, and the traveler per Union Pacific walked away, saying, quietly, "I jest thought I could induce him to change his mind *a little*."

The late Rev. Dr. Guthrie was one of the ablest and noblest men whom modern Scotland has produced, and to whom, with Drs. Chalmers, Cunningham, and Candlish, the Scottish people are more indebted than to any other four for the result of that controversy which led to the formation of the Free Church in 1843. Like all characters truly great, the good doctor was one of the simplest and most lovable of men, as one may infer from these lines written by him:

I live for those that love me,
For those that love me true;
For the heaven that smiles above me,
And waits my coming too;

For the cause that lacks assistance,
For the wrongs that need resistance,
For the future in the distance—
For the good that I can do.

There are few better sermons than that. And how nicely summed up in the last line!

OUR LONDON SCRAP-BOOK.

THE FOUNDLING HOSPITAL.

In that quarter of London which lies upon the eastern boundaries of Bloomsbury stand a considerable number of mansions which were at one time the residences of the great, but which in the course of years have changed proprietorship and condition, and are now tenanted by owners of boarding-houses, or marked off into lawyers' chambers, or sublet to shop-keepers. Up and down the massive stone staircase,

at one time the passage of a Lord Chancellor, the impecunious lodger now moves. The big houses have outlived their time. An air of gentle melancholy pervades the dirty bricks. The extinguishers at the doors, in which the link-boys of a former age were wont to stick their flambeaux, have become anachronisms. The whole region speaks of faded respectability, and does not even make a pretense of clinging to the memory of a glorious past. In the midst of this quarter stands the Foundling Hospital. A long stretch of iron railing—at each end of which is a still longer stretch of brick wall with thick and sombre foliage rustling over it—shuts the establishment in from the outer world. Near the centre of the iron railing stands a high pedestal, on which is a statue of good old Captain Coram, the founder. He smiles benignly on every passer-by. Behind the railing is an extensive carriage drive with flagged footways leading to a large dull brick building—the hospital itself.

It is Sunday morning; the hour about eleven. A number of fashionably dressed people are entering the iron gates and proceeding along the flagged footways. A gorgeous functionary at the gate-house, brilliant in gold and scarlet, surveys the stream of humanity as it slowly meanders past. A sleepy and unmusical bell invites us, and we also will enter the gates, and pass the stolid beadle, and tread the flagged footway. There is a wonderful sense of quiet and repose and security in this inclosure. The sensation is similar to that which one experiences in wandering through the still quadrangles of an old university, or in pacing the solemn spaces of an abbey, or in exploring the mysterious surroundings of a convent. We have arrived at the doors of the hospital, and ascertain that morning service is about to be "performed" in the chapel of the institution. A gentleman stands at the door holding a silver plate. Tacitly he invites subscriptions. The gentleman holding the silver plate does not care how large your subscription is. But you observe that he has a constitutional objection to widows' mites. Poor woman! She may be but ill able to afford the sixpence which she drops on to the other coins when the gentleman with the silver plate declines to accept her penny, and possibly she is drawn to the building by tender and irresistible— There! one would rather not have noticed that incident at the porch of a house of worship.

The chapel, which is commodious, is a portion of the main building. It is surrounded by galleries. The seats are high and narrow, the windows suitably stained. Behind the communion-table stands Benjamin West's celebrated picture, "Christ blessing little Children"—a touching comment on the nature of the institution. We will take our place in one of the side galleries, where we may obtain a full view of the foundlings. They are seated in the back gallery, facing the communion-table and the picture. The boys are ranged on one side of the organ, the girls on the other. There are about a hundred of each, the very young ones sitting in the front rows. The boys are dressed in plain brown tunics fastened with belts, and surmounted by clean linen collars. The girls present a sight more picturesque than any other in this big metropolis. Their pure white aprons, descending from the throat to the skirt of the dress, the pretty Normandy caps (seen now only in Reynolds's pictures), the intelligent white faces, the always devout attitude, give to these children, clustered in shining rows, and held here from contact with a too rough world, a beauty indescribable. Born in shame and destined to misery, but snatched by a kindly intervention and placed in circumstances of security and peace, as one gazes upon their sweet and upturned faces the fancy—not easily smothered—presents itself that here is a congregation, not altogether mortal, practicing on earth for the enjoyments of heaven, learning gentle movements and kind looks, and attuning their fresh voices for everlasting anthems: a harmless fancy, and all too ruthlessly destroyed by reflecting on the probable future of these possible angels.

The clergyman has mounted the reading-desk. He commences intoning the Church service—"When the wicked man"—and all the children rise. How sweetly their young voices sound in the responses! It is a good place for a man engaged all week in the tough combat for life to visit now and then. He will be conscious of sensations unusual but not ungrateful. We plead guilty to the experience of a strange and unaccountable feeling as we heard the curate read out, in dry, unfeeling tones, "Honor thy father and thy mother," and as the poor children, so literally bereft of parentage, responded in clear, musical chorus, "Lord, have mercy upon us, and incline our hearts to keep this law." The incident revealed to us the full meaning of the word *irony*, till then but partially appreciated. After the service an anthem was sung by the children, led by half a dozen professional vocalists of some note. After the anthem the preacher entered the pulpit and preached. George Eliot has warned us to be at all times very slow in finding fault with the utterances of the minister of the Gospel, because it may so happen that while we are passing our criticisms upon the literary merits of his discourse he may be "shedding hot tears in secret because he can not find the light or the strength to say the right word or do the difficult deed." Yes, but the sermon at the Foundling chapel was so utterly the *wrong* word, and was so clearly a perfunctory performance, that one has no qualms in recording a very decided opinion about it. It was a long doctrinal discourse, not badly composed, full of theological technicalities and abstruse arguments. It was not ill suited to an adult and thoughtful congregation. From a Caledonian pulpit it would have sounded appropriately. It would not have been out of place in the class-room of a college of divinity. But from beginning to end there was not a sentence—a syllable—directed to the children or suited to their capacity, and the very little ones in the front row evinced painful signs of weariness, dropping off to sleep one by one, falling forward at times with a sudden motion, and caught by the watchful and bigger ones behind. Milton recorded it as a calamitous circumstance that the hungry sheep looked up and were not fed. But what is to be said of those who to the hungry lambs deny their sustenance?

At the end of the service the entire building is thrown open to the inspection of the public. The clean and lofty dormitories, the spacious

"LORD, HAVE MERCY UPON US, AND INCLINE OUR HEARTS TO KEEP THIS LAW."

school-rooms, the kitchens at the basement, wide as catacombs, but cheerfuler. The visitors explore every nook and corner. A yellow kid glove lifts the shining cover of a kitchen copper, and a face surrounded by lustrous curls looks smilingly into the cavity. A bevy of bright maidens, under the control of a mother in spreading silks, examine with the eyes and hands of amateurs the texture of the bedclothes. Grave-looking professional men and vacuous-looking dandies walk about circumspectly, as if they had got into the wrong place. The reception and committee rooms contain many works of great interest. Here, indeed, we see the accidental influence which led to the founding of the Royal Academy. Here was the first collection of new and original works of art exhibited in London. When the building was completed it was thought desirable to adorn the walls with pictures, but for this adornment the charity could not afford to pay. Reynolds, Wilson, Ramsay, Hayman, and Rysbrack contributed works gratuitously. Above all, Hogarth painted his "March of the Guards to Finchley," a painting which is worth a pilgrimage to see. Old Will Hogarth was very fond of the institution, and helped it in a hundred ways. And in the same room that contains his likeness of Captain Coram stands a glass case where you will find his punch-bowl religiously preserved—a strange and characteristic relic of that ferocious satirist and kindly man. There are several other glass cases ranged along the walls, containing autographs and documents more or less interesting as connected with the history of the institution and the memory of celebrated men departed. Among others is a letter from Charles Dickens to the trustees of the Foundling. The author of *Oliver Twist* had a pew in the chapel when he resided at Tavistock House, near Russell Square. He made use of his knowledge of the establishment, as readers will remember, in *No Thoroughfare*, a Christmas story afterward dramatized and produced at the Adelphi. A cartoon, or a portion of a cartoon, by Raphael, "The Murder of the Innocents," and "The Adoption of Moses by Pharaoh's Daughter," a painting by Hogarth, are the only other objects of note. As we are looking at the latter we hear in some adjacent hall or corridor the "tramp, tramp" of many feet. We hasten in the direction of the sound.

The children are marching to dinner. We happen first upon the boys' dining-room. The lads stand at long tables. At a signal their hands are folded and their eyes closed. At a second signal the brass-band at the remotest ta-

SINGING GRACE.

age to justify their removal to the gay metropolis.

It may not be out of place to remark that there are various rumors afloat as to the administration of this charity by the trustees. Unquestionably the design of the founder is not carried out by them. Captain Coram ordered a box to be left at the door, so arranged that an unfortunate mother might deposit her child silently and secretly. The present trustees make it the first condition of admission that the mother of a child shall make personal application to the board—a test which few would care to encounter. Not only is this so, but it is freely stated that no child is admitted save and except a considerable sum of money be paid with it. Considering that the charity is immensely wealthy—having acquired a large portion of adjoining properties—it is to be regretted that the administrators do not possess the will to carry out the dying wishes of the good old man from whom they inherit the trust. It is perhaps also matter for regret that the place should be turned into a show to the extent it is for the mere purpose of adding to revenues already far more than sufficient to meet the expenses.

But as we leave the place we dismiss all uncomfortable reflections, and let our memories dwell only on the evident good that is being wrought for the little boys in the brown tunics and the sweet-faced girls in the white Normandy caps.

ble, composed of some of the boys themselves, performs a bar. Then all join in a hymn of blessing. We can not catch the words; the music is Gregorian—simple and plaintive. It has a pleasing effect sung by these boys with closed eyes and devotional attitude. Another signal is given, and they sit down on the forms, and proceed to devour a very admirable dinner of bread and meat and potatoes. We leave them thus profitably engaged, and proceed to the dining-room of the girls. It is in every respect similar to that which we have just left. The children are already dining diligently. The elder girls move about and assist the younger ones, cut their meat into small portions, help them to fresh supplies of potato; for not in vain does Oliver ask for more in this charitable retreat. Some of these elder girls are seemingly not unconscious of the glances of undisguised admiration with which many of the visitors regard them. In a room adjoining the girls' dining-hall are seated the lambs of the flock—children of from four to six years of age. These are the mites of humanity who found the theology of the preacher somewhat oppressive. They don't seem to have quite got over it yet, but make a very creditable effort to masticate the solids placed before them. In this room are both boys and girls. The *bona fide* infants—the babies—are kept at an establishment in the country till they have arrived at a sufficiently advanced